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Hourly Solar Radiation Data for  
Vertical and Horizontal Surfaces  
on Average Days in the  
United States and Canada



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# Hourly Solar Radiation Data for Vertical and Horizontal Surfaces on Average Days in the United States and Canada

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ABSTRACT

The majority of the available solar radiation data for the United States and Canada are in the form of either monthly averages of daily total radiation on a horizontal surface or hourly values for cloudless days on horizontal, tilted, and vertical surfaces. Hourly solar radiation data for walls and roofs under "average" solar conditions were computed in order to be able to make estimates of the effect that incident solar radiation has on a building and/or its heating and air conditioning system over a heating and/or cooling season. Calculation procedures developed by Liu and Jordan were modified and hourly solar radiation data were compiled for 80 locations in the United States and Canada. Data were also computed and tabulated for a new parameter called "sol-air temperature for glass".

Key Words: Computer; energy; radiation; solar.





# Hourly Solar Radiation Data for Vertical and Horizontal Surfaces on Average Days in the United States and Canada

by

Tamami Kusuda and Katsumi Ishii

## 1. Introduction

There are basically two ways that solar radiation data can be used for design purposes in the building profession. One way is to use past hourly data for the locality or similar locality in question, estimate through mathematical simulation what the performance factors of the building and for its components would have been under those conditions, and base future predictions for performance on that analysis. The second way is to use data that have been derived for specific types of days, either completely clear, "average", or statistically analyzed data for a particular solar process, to calculate the performance of the building and for its components for those types of days.

The first technique has the advantage of easily accounting for the detailed transient nature of the interaction between the solar radiation and the building, and the building and its heating and air conditioning system. This is particularly important when the heating and air conditioning system has been specifically designed to collect the solar energy and utilize it inside the building for heating and/or cooling. ASHRAE has been very active in the recent past in outlining recommended procedures to conduct such hourly calculations for computing heating and cooling loads on buildings [1]\*. In the ASHRAE-recommended procedures [1], completely clear day data are predicted using theoretical equations and these data are in turn modified with actual hourly recorded cloud-cover data. Computer programs that have been written for predicting the performance of solar heating and/or cooling systems on an hourly basis use actual recorded hourly solar radiation data [2, 3].

The primary disadvantages of using this first technique are the cost and complexity associated with the use of the computer programs and the lack of good hourly data, particularly for the solar radiation itself.

The major source of solar radiation data in the United States is the National Weather Service and its network of stations. The data collection began in 1902 with the first measurements of the direct component of the solar radiation at normal incidence being made in Asheville, North Carolina. At the present time, there are 86 stations covering the U.S. and the West Indies. Reference 4 gives a complete history of the network. The majority of the present 86 stations record only the total radiation on a horizontal surface. At five of the stations, the direct component is also measured. Of the 86 stations, 67 have their data processed for daily total only, while hourly data are processed at the other 19. Reference 5 describes how the data can be made available either on tape or punched cards.

In addition to the relatively small amount of hourly solar radiation data generally available as described above, the quality of the data has been questioned. Jessup has reported [4] that estimated data errors range from  $\pm 5$  percent to  $\pm 30$  percent. This has been mainly due to insufficient resources in all but the recent past to properly maintain the network. A complete analysis of some of the specific problems with the network instrumentation is included in references 6 and 7.

There is evidence, with the increasing emphasis on the use of solar energy in buildings, that much of the past solar radiation data will be rehabilitated and additional data will be collected in the future; however, it is unlikely that the hourly data to be taken will be extended to cover surfaces other than the horizontal for the majority of the stations. For this and other reasons given above, emphasis will be placed in the foreseeable future on using solar radiation data for specific types of days and orientations for design purposes.

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\* See references at end of text.



The 1977 ASHRAE Handbook of Fundamentals [8] will include tables of solar heat gain factors for all combinations of six different northern latitudes, sixteen primary compass orientations plus the horizontal, for the 21st day of each month of the year and for each hour of that day. This enables one to calculate the amount of solar energy passing through a unit area of reference glazing (single sheet of 0.3 cm (1/8 in.) thick double-strength window glass) on a completely clear day, and is based on a calculation procedure developed by Stephenson [9]. Recently Morrison and Farber [10] have extended this type of calculation and have produced tables of incident solar radiation for all combinations of six different northern latitudes, five different south-facing surfaces tilted up at angles ranging from latitude minus 10 degrees to the vertical plus the horizontal, for the 21st day of each month of the year and for each hour of that day. Both of these above sets of data can be used for design purposes to determine the maximum effect that the solar radiation is likely to have for a given condition or in a given situation. However, it is felt desirable to also have similar tables of data for "average" conditions so that estimates can be made for the long-term effect that incident solar radiation has on a building and for its heating and air conditioning system.

References 11 and 12 contain a series of 12 monthly maps showing isoclines of daily total radiation on a horizontal surface for the United States and the world, respectively. The data were gathered from a large number of sources and can be used to indicate general trends and to predict areas of potential solar energy applications.

Liu and Jordan [13, 14, 15] conducted extensive analyses during the early 1960's on the available solar radiation data and developed several empirical correlations that can be used to estimate the available solar radiation on "average" days for each month of the year and for a large number of locations in the United States and Canada. Using the correlations, it is possible to take the monthly average daily total radiation on a horizontal surface, divide the daily total into direct and diffuse components, convert each component into hourly values, and then compute the hourly value of either component on a surface of any orientation desired.

This report outlines the technique that was used to compute and tabulate the monthly "average" incident radiation on an hourly basis during the day for each month of the year, and each of eight different vertical orientations. The data was tabulated for 80 different locations in the United States and Canada. A minor modification was made to the basic technique recommended in the Liu, Jordan procedure [14, 15] in order to eliminate what was believed to be erroneous results near the sunrise and sunset hours. An additional parameter called "sol-air temperature for glass" was also computed and tabulated for each of the locations. An explanation of the meaning of this parameter is included in Section 7 of the report.

## 2. Calculation Procedure of Liu and Jordan

The pertinent correlations developed by Liu and Jordan [13, 14, 15] were for:

- a. the monthly average daily diffuse radiation on a horizontal surface as a function of the monthly average daily total radiation on a horizontal surface,
- b. the ratio of the hourly diffuse radiation to the daily diffuse radiation (both on a horizontal surface) as a function of the number of daylight hours, and
- c. the ratio of the hourly total radiation to the daily total radiation (both on a horizontal surface) as a function of the number of daylight hours.

The correlations were based on available solar radiation data from Blue Hill, Massachusetts; Nice, France; Helsingfors, Finland; and Kew Observatory, London, England.

Liu and Jordan [15, 16] also compiled for each of twelve months at 80 different locations in the United States and Canada, the "average" daily total radiation on a horizontal surface ( $\bar{H}$ ) and the ratio  $\bar{K}_T = \bar{H}/H_0$ , where  $H_0$  is the daily total extraterrestrial radiation on a horizontal surface calculated for the 15th or 16th of each month. The ratio  $\bar{K}_T$  represents the fraction of extraterrestrial radiation that is transmitted through the atmosphere and thus provides a useful index for the solar climate of a particular location.



The correlations described in a, b, and c above are included herein as Table 2, Figure 1, and Figure 2, respectively.  $\bar{K}_d$  in Table 2 is defined as  $\bar{D}/H_o$ , where  $\bar{D}$  is the "average" daily diffuse radiation on a horizontal surface. The step-by-step technique for using the correlations to compute the "average" incident solar radiation on a horizontal or vertical surface is as follows:

- a. Daily total extraterrestrial radiation on a horizontal surface for a given latitude and declination angle is calculated as follows:

$$H_o = \frac{24}{\pi} r I_{sc} (\cos L \cos S \sin W_s + W_s \sin L \sin S) \quad (1)$$

where

$r$  = ratio of solar radiation intensity at normal incidence outside the earth's atmosphere to the solar constant (monthly average values are given in Table 1)

$I_{sc}$  = solar constant,  $1,393 \text{ W/m}^2$  ( $442 \text{ Btu}/(\text{h} \cdot \text{ft}^2)$ )\*

$L$  = latitude, radians

$S$  = solar declination angle, radians, monthly values are given in Table 1

$W_s$  = sunrise hour angle, radians, obtained from:

$$\cos W_s = -\tan L \tan S \quad (2)$$

- b. Obtain the monthly average daily total radiation on a horizontal surface,  $\bar{H}$ , from references 15 and 16 or other available sources.

- c. Calculate  $\bar{K}_T$  by:

$$\bar{K}_T = \frac{\bar{H}}{H_o} \quad (3)$$

or obtain the value from references 15 and 16 for any of 80 locations.

- d. Determine the value of  $\bar{K}_d$  from Table 2.

- e. Calculate the monthly average daily diffuse radiation on a horizontal surface,  $\bar{D}$ , by:

$$\bar{D} = \bar{K}_d \cdot H_o \quad (4)$$

- f. Calculate the value of a factor,  $r_d$ , from the following equation or determine from Figure 1:

$$r_d = \frac{\pi}{24} \frac{\cos W - \cos W_s}{\sin W_s - W_s \cos W_s} \quad (5)$$

where

$W$  = hour angle corresponding to a given hour of the day (solar time), radians

\* This was the value used by Liu and Jordan. A value of  $1,353 \text{ W/m}^2$  ( $428 \text{ Btu}/(\text{h} \cdot \text{ft}^2)$ ) is the value currently recommended by a number of governmental agencies and technical societies in the U.S. [17].

- g. Calculate the average hourly diffuse radiation on a horizontal surface ( $\bar{I}_{dh}$ ) by:

$$\bar{I}_{dh} = r_d \bar{D} \quad (6)$$

- h. Determine the value of a factor,  $r_T$ , from Figure 2.

- i. Calculate the average hourly total radiation on a horizontal surface ( $\bar{I}_{Th}$ ) by:

$$\bar{I}_{Th} = r_T \bar{H} \quad (7)$$

- j. Calculate the average hourly direct radiation on a horizontal surface ( $\bar{I}_{Dh}$ ) by:

$$\bar{I}_{Dh} = \bar{I}_{Th} - \bar{I}_{dh} \quad (8)$$

- k. Calculate the angle of incidence between the sun's direct beam and a horizontal ( $\theta_H$ ) or vertical surface ( $\theta_v$ ) by:

$$\cos \theta_H = \cos L \cos S \cos W + \sin L \sin S \quad (9)$$

or

$$\cos \theta_v = \cos ALT \cos SAZM \quad (10)$$

where

ALT = solar altitude angle, the angle between the sun's direct beam and the horizontal, radians

SAZM = the difference between the solar azimuth angle (AZM) and the wall azimuth angle (WAZ), radians

Figure 3 shows the relationship between the various angles.

- l. Calculate the average hourly direct radiation on a given vertical surface ( $\bar{I}_{Dv}$ ) by:

$$\bar{I}_{Dv} = \frac{\bar{I}_{Dh}}{\cos \theta_H} \cdot \cos \theta_v \quad (11)$$

- m. Approximate the average hourly diffuse radiation on a given vertical surface ( $\bar{I}_{dv}$ ) by:

$$\bar{I}_{dv} = \frac{\bar{I}_{dh}}{2} \quad (12)$$

- n. Approximate the average hourly reflected radiation from the ground on a given vertical surface ( $\bar{I}_{gv}$ ) by:

$$\bar{I}_{gv} = \frac{\rho_g \bar{I}_{Th}}{2} \quad (13)$$

where

$\rho_g$  = ground reflectance



- o. Calculate the average hourly total radiation incident on a given vertical surface by:

$$\bar{I}_{Tv} = \bar{I}_{Dv} + \bar{I}_{dv} + \bar{I}_{gv} \quad (14)$$

### 3. Anomalous Calculated Values Using the Liu and Jordan Calculation Procedure

The procedure described in the previous section was used to generate the hourly solar radiation values incident on vertical surfaces oriented in the eight primary directions (S, SW, W, NW, N, NE, E, and SE) as well as the horizontal surface. Upon analyzing the data, exceptionally large values of incident solar radiation were observed near the sunrise and sunset hours. A close examination of the calculation procedure revealed that the large peak resulted from the use of equation (11) where  $\cos \theta_H$  is very close to zero at the sunrise and sunset hours. This phenomenon is illustrated in Figure 3 where the value of the direct component of the solar radiation ( $\bar{I}_{DN}$ ) is computed for a vertical surface oriented directly facing the sun (equation (11) with  $\cos \theta_v = 1$ ) on February 22 in Miami, Florida:

$$\bar{I}_{DN} = \bar{I}_{Dh} / \cos \theta_H \quad (15)$$

The inconsistency appeared to arise as a result of the sensitive empirical relationship between  $\bar{K}_T$ ,  $r_T$ ,  $\bar{K}_d$ , and  $r_d$ . Upon discussions with one of the authors of [15, 16]\*, it is felt that the inconsistency is mainly due to the inaccuracy of the empirical relationship for  $r_T$  (Figure 2).

### 4. ASHRAE Methodology for the Computation of the Direct Component of the Solar Radiation

In order to circumvent the anomaly described in the previous section, it was decided to replace equation (15) with an equation similar to one used in reference 18:

$$\bar{I}_{DN} = \bar{A} e^{-\left[ \frac{B}{\cos \theta_H} \right]} \quad (16)$$

The original equation was developed by Stephenson [9] for completely clear sky conditions. It has been assumed in this work that the same basic form of the equation is valid for "average" day solar radiation. A modified multiplying coefficient has been adapted, denoted in equation (16) as  $\bar{A}$  (as opposed to  $A$  in reference 9).

The monthly values of  $B$  for equation (16) are given in Table 1. In order to develop appropriate values of  $\bar{A}$ , it was necessary to calculate the average daily direct radiation over a horizontal surface,  $\bar{H}_{Dh}$  by:

$$\bar{H}_{Dh} = \int_{\text{sunrise}}^{\text{sunset}} \bar{I}_{DN} \cos \theta_H dt \quad (17)$$

where  $t$  denotes time. Combining equations (16) and (17):

\* Private communication with Dr. Liu.

$$\bar{H}_{Dh} = \frac{24}{\pi} \bar{A} \int_0^{W_s} e^{-\left[\frac{B}{\cos \theta_H}\right]} \cos \theta_H dW \quad (18)$$

By denoting the integral of the above equations by G, and by using  $\bar{K}_T$  and  $\bar{K}_d$  of the Liu and Jordan procedure, equation (18) can be written:

$$\bar{H}_{Dh} = \frac{24}{\pi} \bar{A} \cdot G = (\bar{K}_T - \bar{K}_d) H_o \quad (19)$$

By substituting equation (1) into equation (19), the value of  $\bar{A}$  can be calculated as follows:

$$\bar{A} = (\bar{K}_T - \bar{K}_d) f \quad (20)$$

where

$$f = \frac{r I_{sc}}{G} (\cos L \cos S \sin W_s + W_s \sin L \sin S) \quad (21)$$

Table 3 lists the values of f which were computed using the above equations. The values are tabulated for latitudes of 0 through 50 degrees in one-degree increments and for each of the 12 months. The monthly values are plotted in Figure 5.

The concept of f is convenient since its value is independent of the specific local climate. As an example, both Hatteras, North Carolina and Albuquerque, New Mexico are at a latitude of 35° N. Table 3 indicates the value of f in January to be 644.5 at this latitude. The Liu and Jordan tabulated data [15, 16] show the following values of  $\bar{K}_T$  and  $\bar{K}_d$  for these two cities.

	<u>Hatteras</u>	<u>Albuquerque</u>
$\bar{K}_T$	0.634	0.704
$\bar{K}_d$	0.166	0.147

Using these data,  $\bar{A}$  for Hatteras and Albuquerque were determined as 302 and 359 respectively, whereas the cloudless sky value of A developed by Stephenson [9] was 390.

##### 5. Modification of the Liu and Jordan Procedure to Eliminate the Anomalous Calculated Solar Radiation Values

With the relationship between equation (16), the constant  $\bar{A}$ , and the constants  $\bar{K}_T$  and  $\bar{K}_d$  established, a modified hourly calculation procedure was developed as follows:

- Same as before.
- Same as before.
- Same as before.
- Same as before.
- Same as before.

- f. Same as before.
- g. Same as before.
- h. Determine the value of  $f$  from Table 3 for a given month and latitude.
- i. Calculate  $\bar{A}$  using equation (20).
- j. Calculate the hourly value of  $\bar{I}_{DN}$  using equation (16).
- k. Same as before.
- l. Calculate the average hourly direct radiation on a horizontal surface by:

$$\bar{I}_{Dh} = \bar{I}_{DN} \cos \theta_H \quad (22)$$

- m. Calculate the average hourly total radiation on a horizontal surface by:

$$\bar{I}_{Th} = \bar{I}_{Dh} + \bar{I}_{dh} \quad (23)$$

- n. Calculate the average hourly direct radiation on a vertical surface by:

$$\bar{I}_{Dv} = \bar{I}_{DN} \cos \theta_v \quad (24)$$

- o. Same as m. in Section 2.
- p. Same as n. in Section 2.
- q. Same as o. in Section 2.

## 6. Computation and Tabulation of Data for Eighty Locations

A computer program was written for carrying out the calculation procedure described in the previous section. A listing of the program is given at the end of this report. Complete tables of total solar radiation values are also included at the end of the report in Table 4 for 80 different locations in the United States and Canada [15, 16]. The tabulated solar radiation data are all in units of either Btu/(h · ft<sup>2</sup>) (= 3.152 W/m<sup>2</sup>) or Btu/ft<sup>2</sup> (= 11,348.9 J/m<sup>2</sup>).

Sample results are shown in Figures 6 through 12 for the horizontal and different vertical orientations in February in Miami, Florida. Shown in these figures are the hourly radiation values calculated by Liu and Jordan, the authors' modification of the Liu and Jordan procedure, and the data for completely clear skies [10].

## 7. Calculation of "Sol-Air Temperature for Glass"

In general, energy is transferred through glazing both by transmitted solar radiation and by conduction and convection as a result of a temperature difference between the outside and the inside air. The governing equation for the net heat transfer,  $q$  (W), across the glazing into a building space is:

$$q = A \left[ \bar{\tau} I + U (t_o - t_i) \right] \quad (25)$$



where

$A$  = cross-sectional area of the glazing,  $m^2$

$\bar{\tau}$  = effective transmittance of the glazing to short-wave radiation

$I$  = incident total solar radiation on the glazing,  $W/m^2$

$U$  = overall heat transfer coefficient for the glazing,  $(W/(m^2 \cdot ^\circ C))$

$t_o$  = outside air temperature,  $^\circ C$

$t_i$  = inside air temperature,  $^\circ C$

If the first term in equation (25) is multiplied and divided by  $U$ , the equation can be rearranged to:

$$Q = U A \left[ \frac{\bar{\tau} I}{U} + t_o - t_i \right] \quad (26)$$

or

$$q = U A [SATG - t_i] \quad (27)$$

where

$$SATG = \frac{\bar{\tau} I + t_o}{U} = \text{sol-air temperature for glass, } ^\circ C$$

Values of SATG are useful in assessing the net heat transfer through glazing into the building. In other words, for those periods of time when  $SATG > t_i$ , there is a net heat gain into the building and when  $SATG < t_i$ , there is a net heat loss.

Equation (26) is written on an instantaneous basis and can be used for computing hourly values. The equation can also be written to be valid for a period covering a number of hours  $N$ :

$$Q = U A \left[ \frac{\bar{\tau} \sum_{i=1}^N I}{U} + N (\bar{t}_o - t_i) \right] \quad (28)$$

where

$Q$  = net heat transfer over the time period  $N$ ,  $W$

$N$  = number of hours

$\bar{t}_o$  = average outdoor air temperature over the time period  $N$ ,  $^\circ C$

The indoor air temperature,  $t_i$ , has been assumed to be constant for the time period  $N$ . Equation (28) can be rearranged as was done with equation (25):

$$Q = U A N \left[ \frac{\bar{\tau} \sum_{i=1}^N I}{UN} + \bar{t}_o - t_i \right] \quad (29)$$

$$Q = U A N [SAG - t_i] \quad (30)$$

where

$$SAG = \frac{\frac{1}{N} \sum_{i=1}^N I}{UN} + \bar{t}_o, \text{ } ^\circ\text{C} \quad (31)$$

The values of SAG were computed for each month of the year, for each of the eight primary vertical orientations and the horizontal, and for each of the 80 locations in the United States and Canada. The values are tabulated in Table 4 in units of  $^\circ\text{F}$  along with the average hourly radiation values discussed previously.

Four different values of SAG were computed. Two values were for a 24-hour period ( $N = 24$ ), one for single glazing (SATGS) and a second for double glazing (SATGD). The other two computations were also for single and double glazing, but the time period  $N$  was shortened to include only the daylight hours. In all cases, the radiation values  $\sum_{i=1}^N I$  were the total incident radiation under "average" conditions discussed previously. The values of  $\bar{t}$  used in the computations were 0.87 for single glazing and 0.78 for double glazing. The overall heat transfer coefficients were  $6.4 \text{ W}/(\text{m}^2 \cdot ^\circ\text{C})$  ( $1.13 \text{ Btu}/(\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F})$ ) and  $6.0 \text{ W}/(\text{m}^2 \cdot ^\circ\text{C})$  ( $1.06 \text{ Btu}/(\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F})$ ) for single glazing and for winter and summer, respectively. The values used for double glazing were  $3.1 \text{ W}/(\text{m}^2 \cdot ^\circ\text{C})$  ( $0.55 \text{ Btu}/(\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F})$ ) and  $3.1 \text{ W}/(\text{m}^2 \cdot ^\circ\text{C})$  ( $0.54 \text{ Btu}/(\text{h} \cdot \text{ft}^2 \cdot ^\circ\text{F})$ ), respectively. The value of  $\bar{t}_o$  was either the average over the 24-hour period or daylight hours only, depending on the time period  $N$ .

The intent in calculating and compiling the data was to permit computation, for a given glazing size and orientation, of the net heat transfer into the space of a building for "average" solar conditions and for any period of months desired. By repeating the calculation for all the glazing in a given building, the total net effect for the entire building could be determined.

## 8. Summary

The Liu and Jordan method for calculating the incident hourly solar radiation on a surface of any tilt and orientation under "average" conditions was modified and used to compute the average hourly incident total radiation on the eight primary vertical orientations and the horizontal for each month of year and for each of 80 locations in the United States and Canada. In addition, a new parameter was introduced and computed for the 80 locations called "sol-air temperature for glass". The tabulated values enable one to easily compute the net heat transfer through single or double glazing under "average" solar conditions for any of the eight primary vertical orientations or on a horizontal surface.

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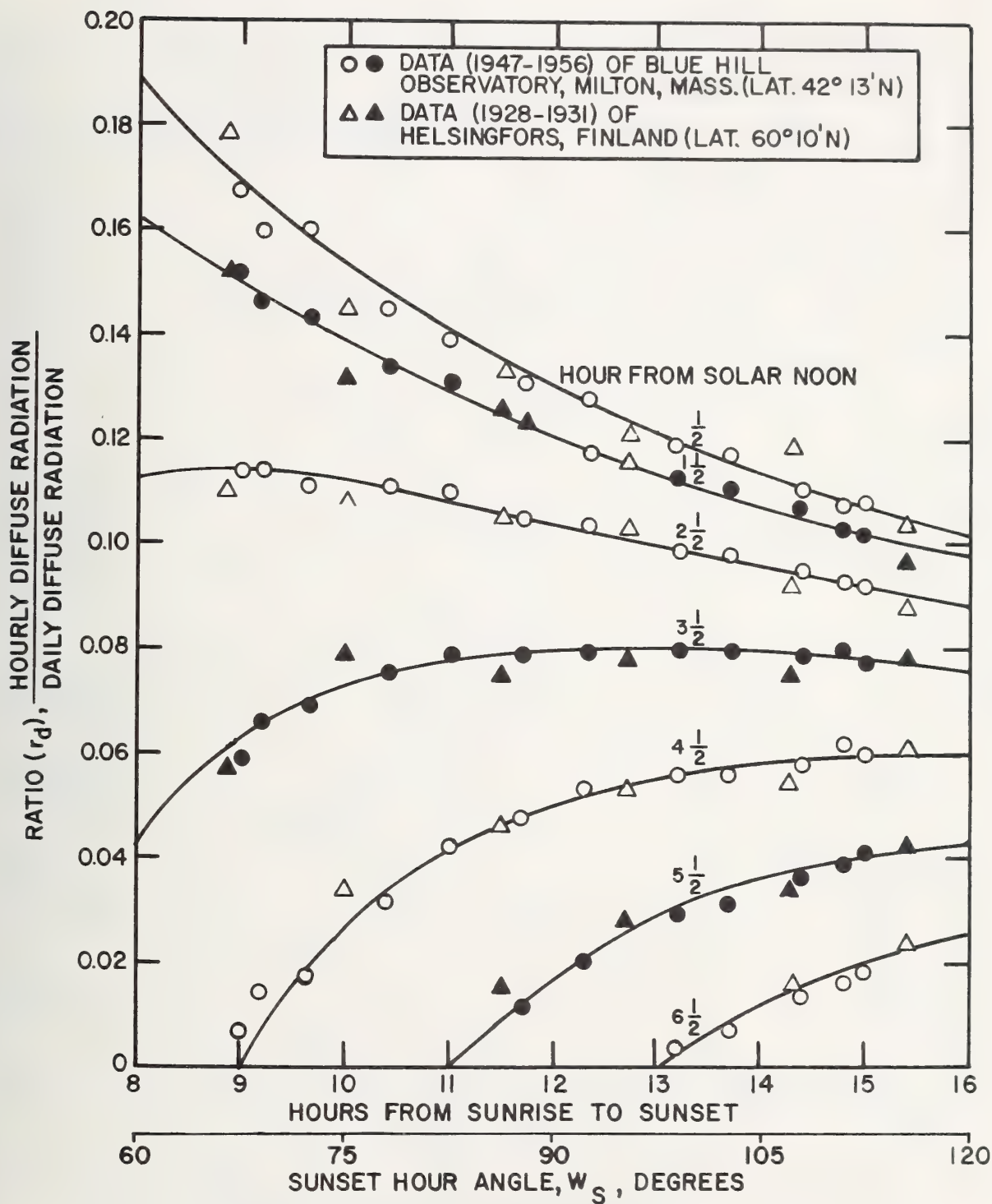


Figure 1 Ratio of Hourly Diffuse Radiation to Daily Diffuse Radiation as a Function of Time of Day [15, 16]

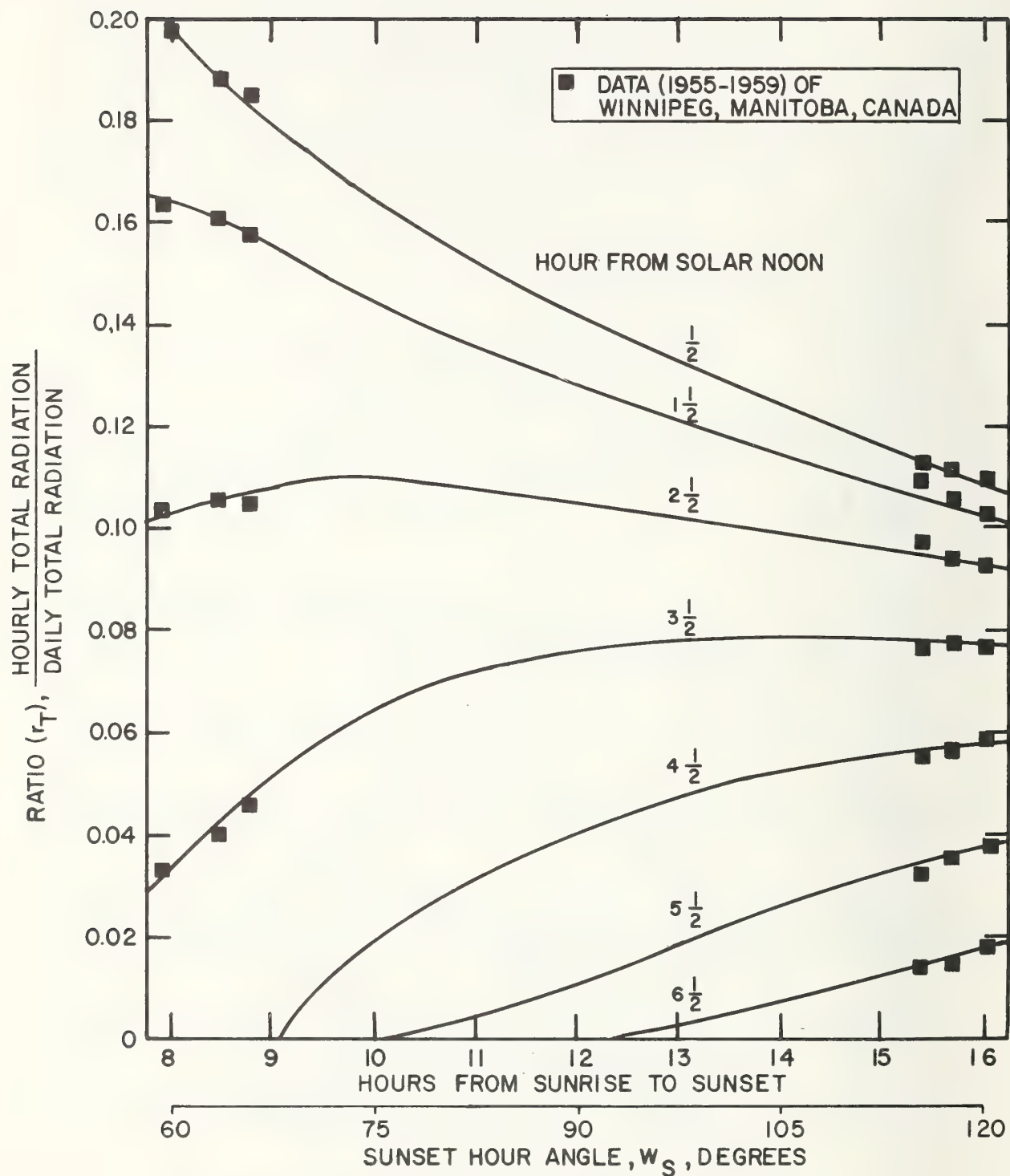


Figure 2 Ratio of Hourly Total Radiation to Daily Total Radiation as a Function of Time of Day [15, 16]





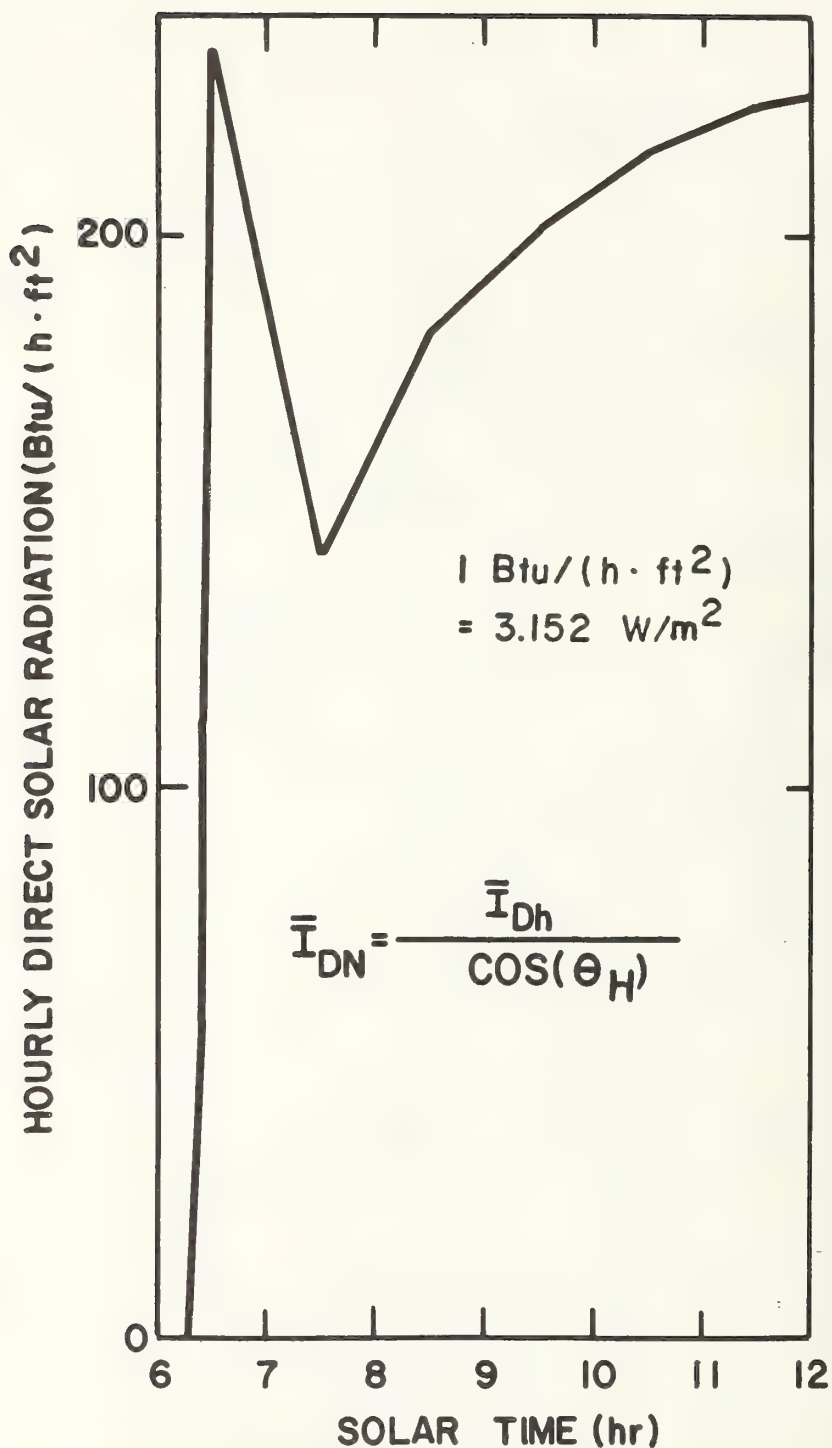


Figure 4 Anomalous Sunrise Hour Solar Radiation Generated by the Liu and Jordan Procedure for February 22 in Miami, Florida

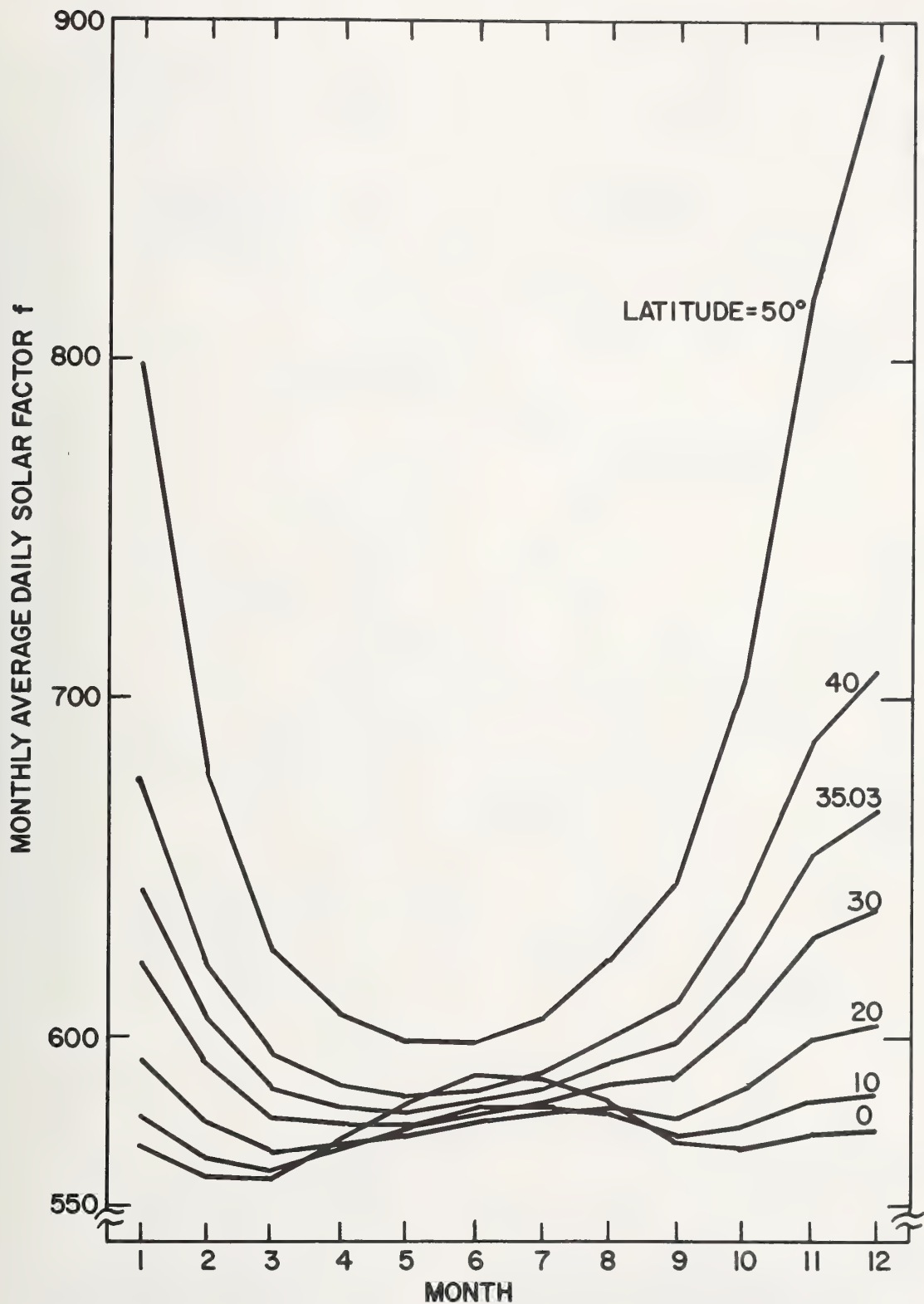


Figure 5 Values of Monthly Average Daily Solar Factor  $f$  for Various Latitudes



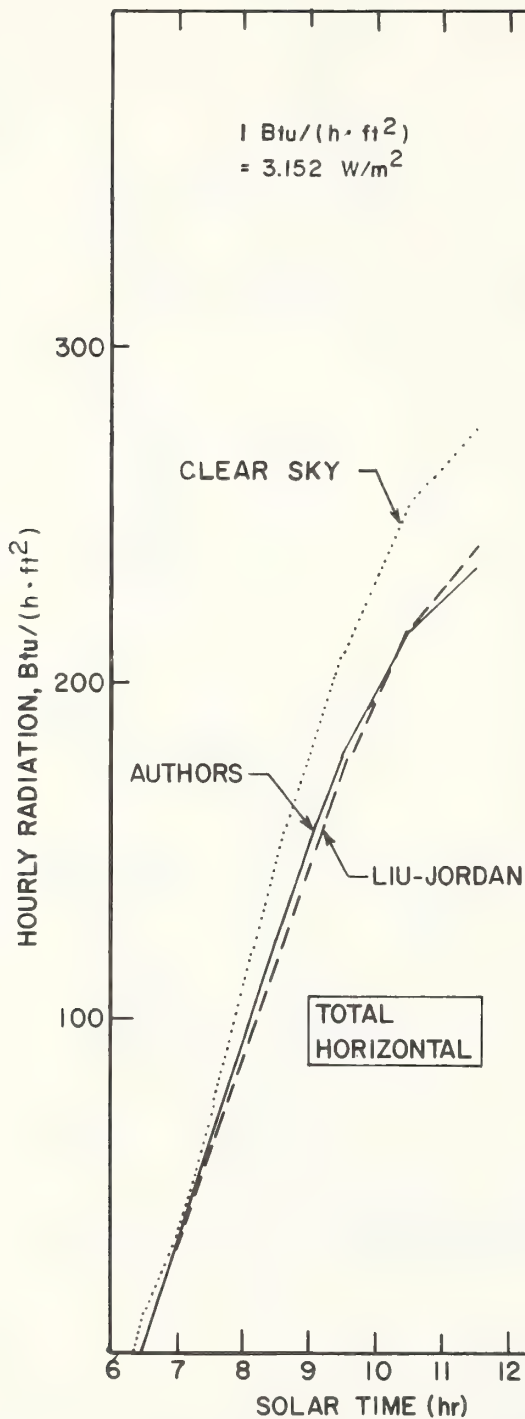


Figure 6 Comparative Plots of Hourly Solar Radiation Incident Upon a Horizontal Surface for February 22 in Miami, Florida

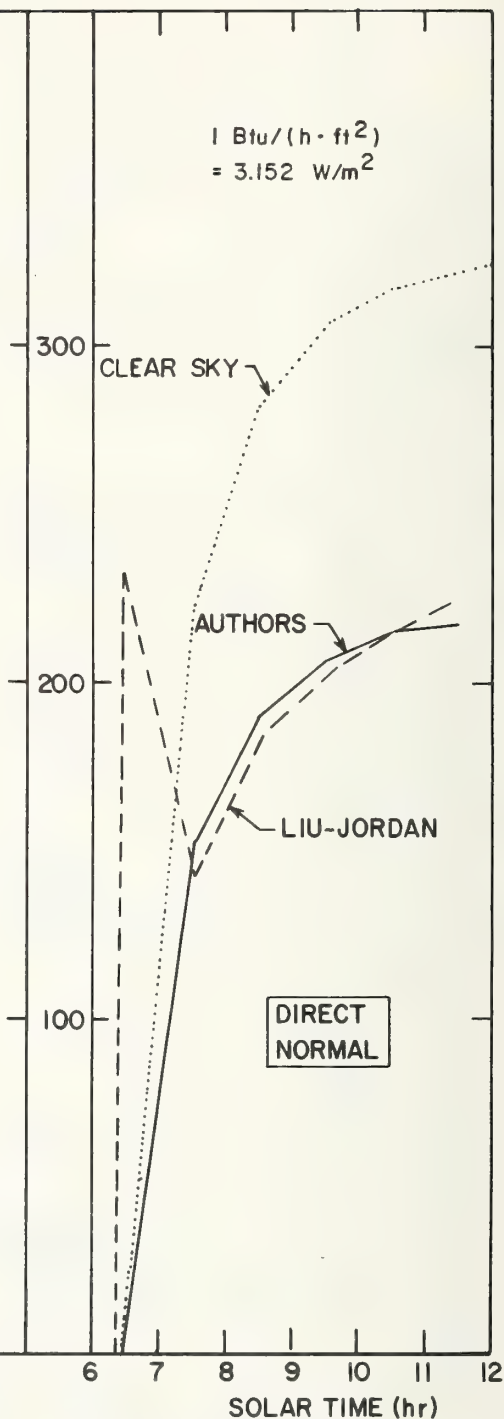


Figure 7 Comparative Plots of Hourly Direct Normal Solar Radiation for February 22 in Miami, Florida

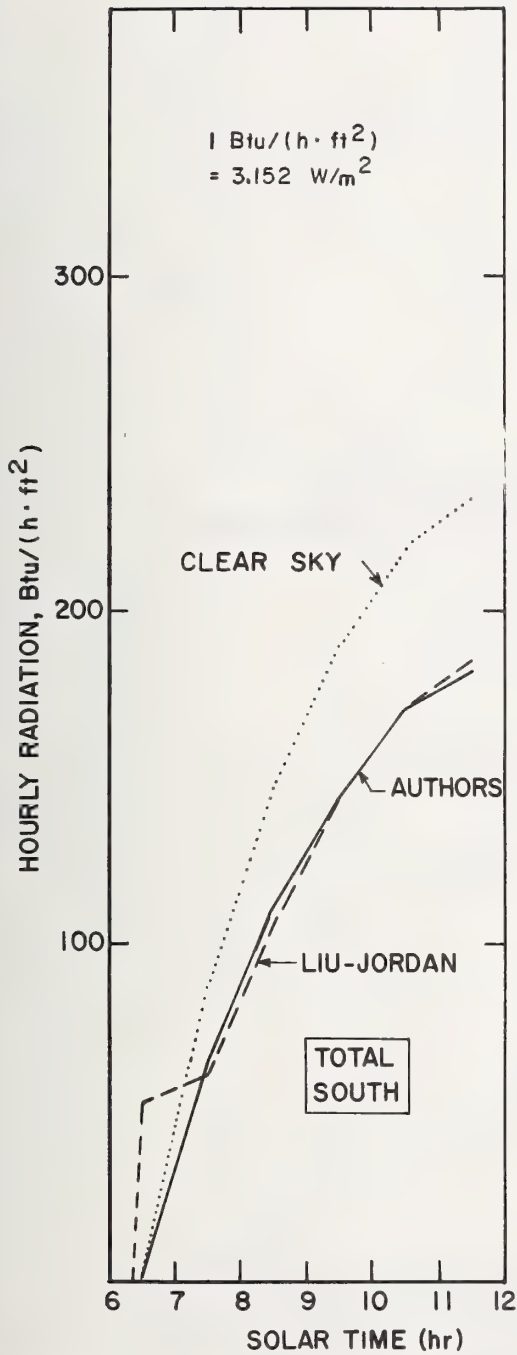


Figure 8 Comparative Plots of Hourly Solar Radiation Incident Upon South-facing Walls for February 22 in Miami, Florida

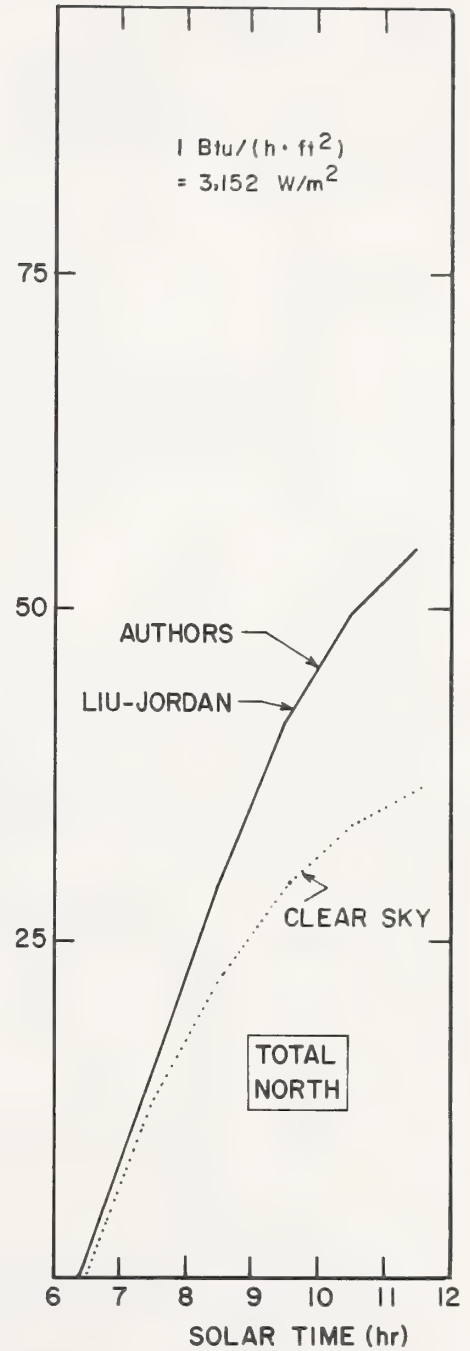


Figure 9 Comparative Plots of Hourly Solar Radiation Incident Upon North-facing Walls for February 22 in Miami, Florida

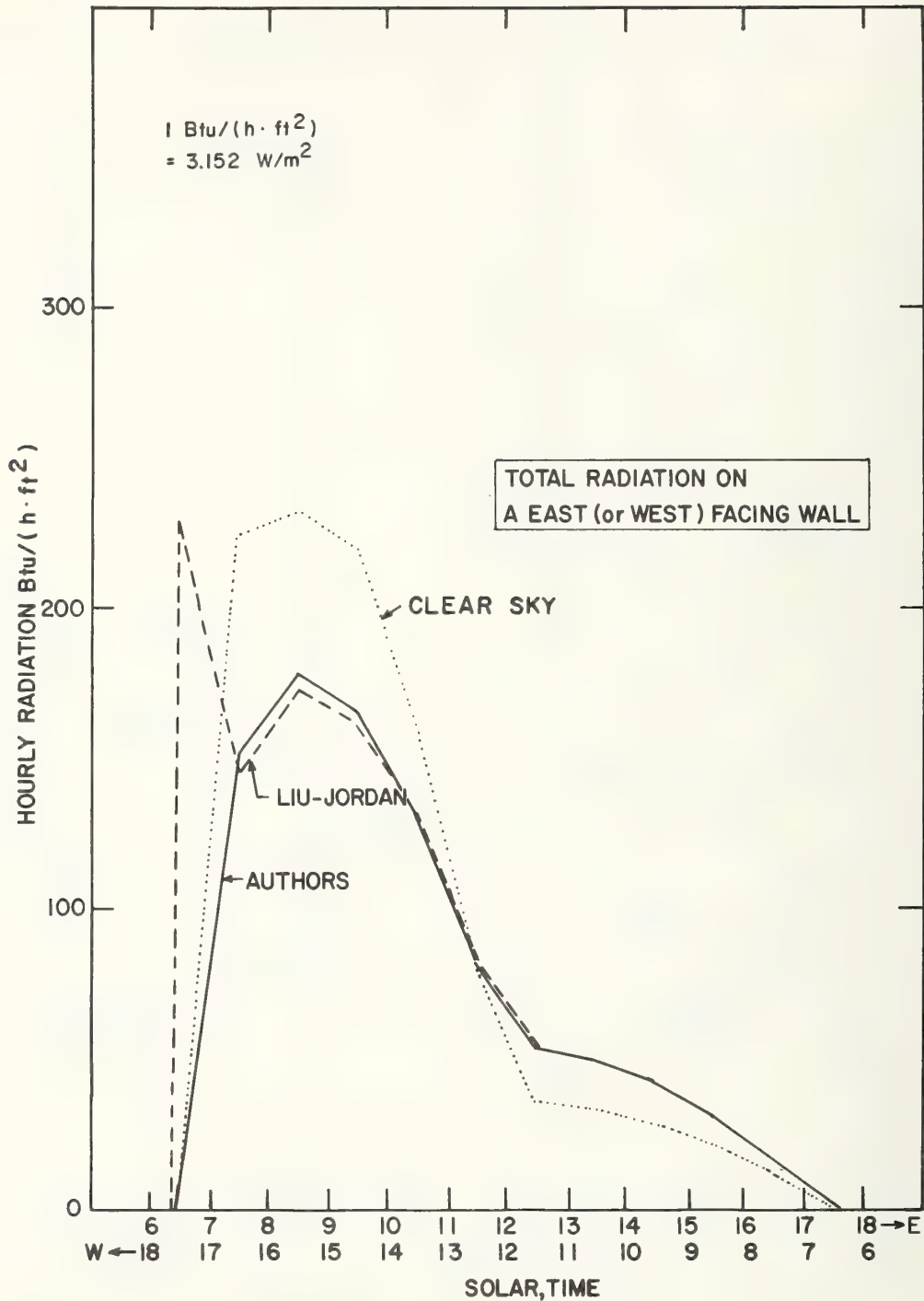


Figure 10 Comparative Plots of Hourly Solar Radiation Incident Upon East-(or West)-facing Walls for February 22 in Miami, Florida



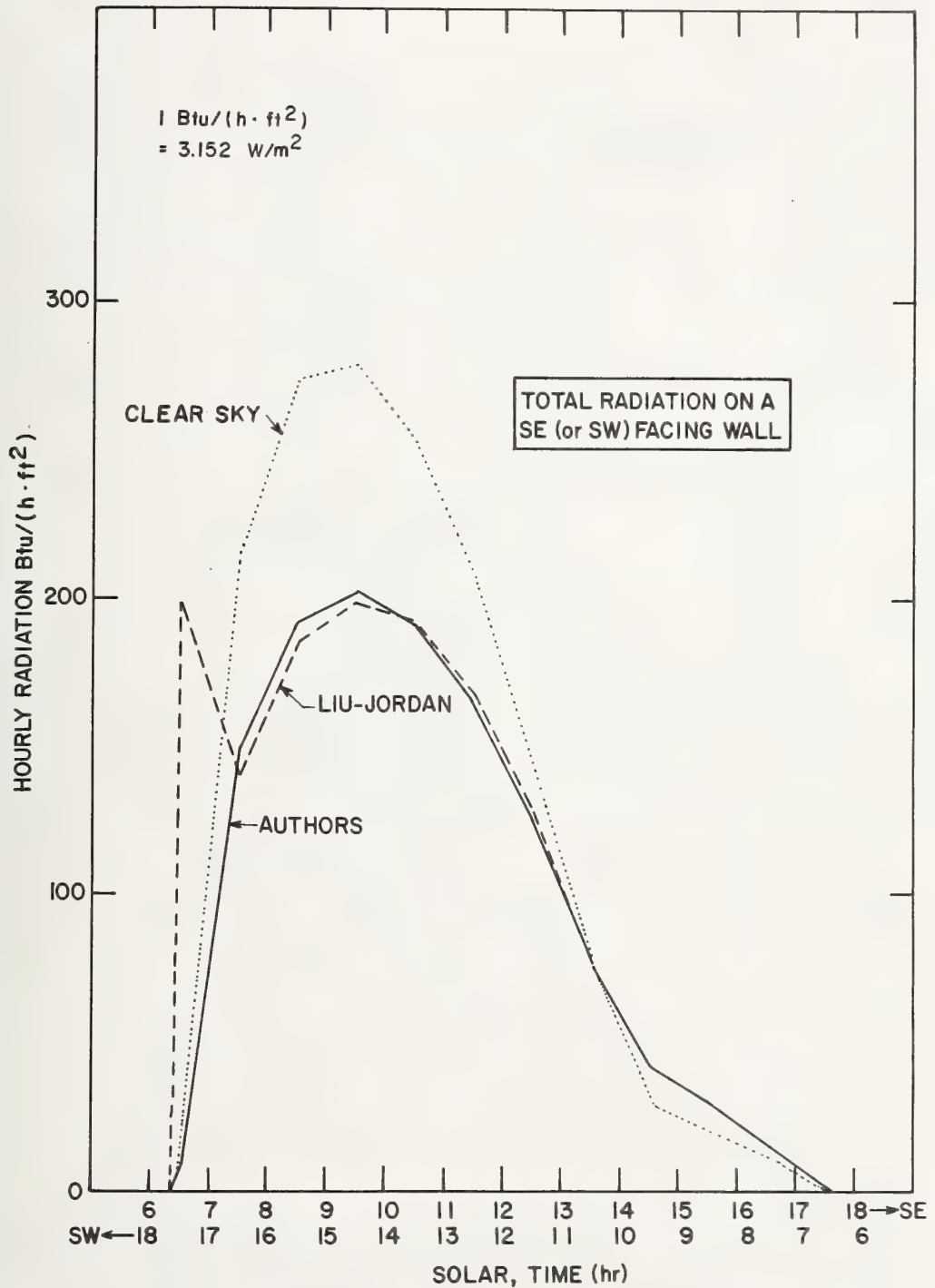


Figure 11 Comparative Plots of Hourly Solar Radiation Incident Upon Southeast- or Southwest-facing Walls for February 22 in Miami, Florida

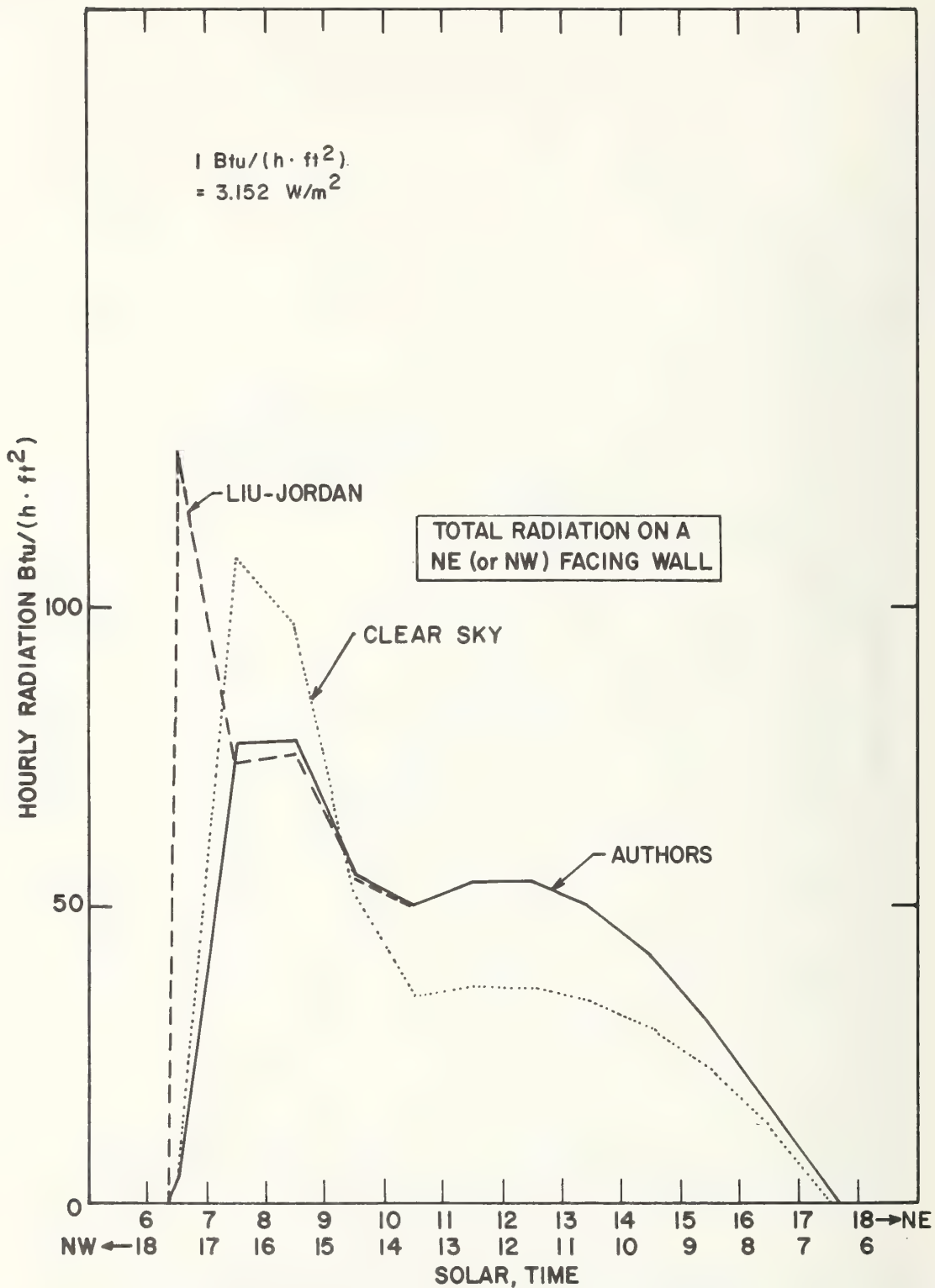


Figure 12 Comparative Plots of Hourly Solar Radiation Incident Upon Northwest- or Northeast-facing Walls for February 22 in Miami, Florida

Table 1 Solar Declination,  $S$ , the Ratio of Solar Radiation Intensity at Normal Incidence Outside Earth's Atmosphere to the Solar Constant ( $\gamma$ ), and Atmospheric Extinction Coefficient  $B$  [18]

Month	Declination $S$	Ratio $\gamma$	Extinction Coefficient $B$
1 January	-19.51	1.0300	0.142
2 February	-10.28	1.0207	0.144
3 March	0.20	1.0057	0.156
4 April	11.56	0.9875	0.180
5 May	20.14	0.9727	0.196
6 June	23.27	0.9670	0.205
7 July	20.26	0.9692	0.207
8 August	12.03	0.9785	0.201
9 September	0.37	0.9945	0.177
10 October	-10.47	1.0133	0.160
11 November	-19.58	1.0267	0.149
12 December	-23.27	1.0327	0.142



Table 2 The Relationship Between the Monthly Average Daily Diffuse  
and the Monthly Average Daily Total Radiation [15, 16]

$K_T$	0.3	0.4	0.5	0.6	0.7	0.75
$K_d$	0.179	0.183	0.188	0.174	0.149	0.125

Table 3 The Value of Factor  $(\bar{A}/(\bar{K}_T - \bar{K}_d))$ 

LAT.	MONTH											
DEG	1	2	3	4	5	6	7	8	9	10	11	12
0.	567.	559.	558.	569.	580.	588.	587.	581.	568.	567.	571.	572.
1.	568.	559.	558.	569.	579.	587.	586.	580.	568.	568.	572.	573.
2.	569.	559.	558.	568.	578.	586.	585.	580.	568.	568.	573.	574.
3.	570.	560.	558.	568.	577.	585.	584.	579.	568.	569.	574.	575.
4.	570.	560.	558.	567.	576.	584.	584.	579.	568.	569.	575.	576.
5.	571.	561.	558.	567.	576.	583.	583.	579.	568.	570.	576.	577.
6.	572.	561.	558.	567.	575.	582.	582.	578.	568.	570.	577.	578.
7.	573.	562.	559.	567.	574.	581.	581.	578.	569.	571.	578.	579.
8.	575.	563.	559.	567.	574.	580.	581.	578.	569.	572.	579.	581.
9.	576.	563.	559.	566.	573.	579.	580.	578.	569.	573.	580.	582.
10.	577.	564.	559.	566.	573.	579.	580.	578.	570.	574.	582.	584.
11.	578.	565.	560.	566.	572.	578.	579.	578.	570.	574.	583.	585.
12.	580.	566.	560.	566.	572.	578.	579.	578.	570.	575.	584.	587.
13.	581.	567.	561.	566.	572.	577.	578.	578.	571.	576.	586.	588.
14.	583.	567.	561.	566.	571.	577.	578.	578.	572.	578.	588.	590.
15.	584.	568.	562.	567.	571.	576.	578.	578.	572.	579.	589.	592.
16.	586.	570.	562.	567.	571.	576.	578.	578.	573.	580.	591.	594.
17.	588.	571.	563.	567.	571.	576.	578.	578.	574.	581.	593.	596.
18.	589.	572.	564.	567.	571.	575.	578.	579.	574.	582.	595.	599.
19.	591.	573.	564.	568.	571.	575.	577.	579.	575.	584.	597.	601.
20.	594.	574.	565.	568.	571.	575.	577.	579.	576.	585.	599.	604.
21.	596.	576.	566.	568.	571.	575.	578.	580.	577.	587.	602.	606.
22.	598.	577.	567.	569.	571.	575.	578.	580.	578.	589.	604.	609.
23.	601.	579.	568.	569.	571.	575.	578.	581.	579.	590.	607.	612.
24.	603.	580.	569.	570.	571.	575.	578.	581.	580.	592.	609.	615.
25.	606.	582.	570.	570.	572.	575.	578.	582.	581.	594.	612.	619.
26.	609.	584.	571.	571.	572.	575.	579.	583.	583.	596.	615.	622.
27.	612.	586.	572.	572.	572.	576.	579.	584.	584.	598.	619.	626.
28.	615.	588.	573.	573.	573.	576.	579.	584.	585.	600.	622.	630.
29.	618.	590.	575.	573.	573.	576.	580.	585.	587.	603.	626.	634.
30.	622.	592.	576.	574.	574.	577.	580.	586.	588.	605.	630.	639.
31.	626.	594.	578.	575.	574.	577.	581.	587.	590.	608.	634.	644.
32.	630.	597.	579.	576.	575.	578.	582.	588.	592.	611.	638.	649.
33.	634.	599.	581.	577.	576.	578.	582.	590.	594.	614.	643.	655.
34.	639.	602.	582.	578.	576.	579.	583.	591.	596.	617.	648.	661.
35.	644.	605.	584.	579.	577.	579.	584.	592.	598.	620.	653.	667.
36.	650.	608.	586.	581.	578.	580.	585.	594.	600.	624.	659.	674.
37.	655.	611.	588.	582.	579.	581.	586.	595.	602.	627.	665.	682.
38.	662.	614.	590.	583.	580.	582.	587.	597.	604.	631.	672.	690.
39.	668.	618.	592.	585.	581.	583.	588.	598.	607.	636.	679.	699.
40.	675.	622.	595.	586.	582.	584.	589.	600.	609.	640.	687.	708.
41.	683.	626.	597.	588.	583.	585.	591.	602.	612.	645.	695.	719.
42.	692.	630.	600.	590.	585.	586.	592.	604.	615.	650.	704.	731.
43.	701.	635.	602.	591.	586.	587.	593.	606.	618.	655.	714.	744.
44.	711.	640.	605.	593.	587.	589.	595.	608.	622.	661.	725.	758.
45.	722.	645.	608.	595.	589.	590.	596.	610.	625.	667.	737.	774.
46.	734.	651.	612.	597.	591.	591.	598.	613.	629.	674.	750.	792.
47.	747.	657.	615.	600.	592.	593.	600.	615.	633.	681.	764.	812.
48.	762.	664.	619.	602.	594.	595.	602.	618.	637.	688.	780.	835.
49.	779.	671.	622.	605.	596.	596.	604.	621.	641.	697.	798.	861.
50.	798.	678.	626.	607.	598.	598.	606.	623.	646.	706.	819.	891.

# Program for Generating Table 3

```

DIMENSION DDEC(12)/-19.51,-10.28,0.2,11.56,20.14,23.27,20.26,12.03
*,0.37,-10.47,-19.58,-23.27/,DLAT(51),FAC(12)
DIMENSION R(12)/.142,.144,.156,.180,.196,.205,.207,.201,.177,.160,
*,.149,.142/
DIMENSION R(12)/1.03,1.0207,1.0057,.9875,.9727,.967,.9692,.9785,
*,.9945,1.0133,1.0267,1.0327/
PI=3.1416
SC=442.1
WRITE(6,60)
60 FORMAT(/10X,10('*'),' THE VALUE OF FACTOR ( A/(KT-KD) ) '10('*')
*)
WRITE(6,70)
70 FORMAT(/5X,'LAT.'27X,'MONTH')
WRITE(6,80)
80 FORMAT(/5X,'DEG      1      2      3      4      5      6      7      8      9      10
*      11      12')
WRITE(6,81)
81 FORMAT()
DO 10 I=1,51
DLAT(I)=I-1.
XLAT=INT(DLAT(I))
RLAT=(XLAT+(DLAT(I)-XLAT)/0.6)*PI/180.
DO 20 J=1,12
XDEC=INT(DDEC(J))
RDEC=(XDEC+(DDEC(J)-XDEC)/0.6)*PI/180.
COSWS=-TAN(RLAT)*TAN(RDEC)
WS=ACOS(COSWS)
DWS=WS*180./PI
COSLD=COS(RLAT)*COS(RDEC)
SINLD=SIN(RLAT)*SIN(RDEC)
S=0.
DO 30 N=1,39
W=WS*N/40
COSZ=COSLD*COS(W)+SINLD
PAR=-B(J)/COSZ
APA=ABS(PAR)
IF(APA.GT.80) GO TO 40
ANS=EXP(PAR)*COSZ
GO TO 50
40 ANS=0.
50 S=ANS+S
30 CONTINUE
ANS0=EXP(-B(J)/(COSLD+SINLD))*(COSLD+SINLD)/2.
AINT=WS/40.*(ANS0+S)
THO=R(J)*SC*(COSLD*SIN(WS)+WS*SINLD)
FAC(J)=THO/AINT
20 CONTINUE
WRITE(6,90) DLAT(I),FAC
90 FORMAT(5X,F3.0,2X,12F5.0)
DO 1 K=10,50,10
IF(I.EQ.K) WRITE(6,81)
1 CONTINUE
10 CONTINUE
STOP
END

```



# Program for the Average Day Hourly Solar Tables

P      MAIN PROGRAM

```
DIMENSION H(12),ZKT(12),TO(12),TOT(12)
DIMENSION TOWN(4)
DO 1 K=1,81
READ(5,4) TOWN
READ(5,2) H,ZKT,TO,XLAT,CITY,TOT
IG=1
SC=0.9
RH0=0.2
CALL LIU(ZKT,H,TO,IG,SC,XLAT,RH0,TOWN,TOT)
1 CONTINUE
2 FORMAT(12F6.1/12F6.3/12F6.1,F5.2,A3/12F4.1)
3 FORMAT(1H1)
4 FORMAT(4A6)
STOP
END
```

```
C      SUBROUTINE LIU(ZKT,H,TO,IG,SC,XLAT,RH0,TOWN,TOT)
C      THIS SUBROUTINE CALCULATES MONTHLY AVERAGE SOLAR HEAT GAIN THROUGH WINDOW2
C      OF FOUR DIFFERENT ORIENTATIONS.
C      ZKT...LIU/JORDAN FACTOR - DAILY TOTAL RADIATION ON A HORIZONTAL SURFACE /
C      THE SAME IN OUTER SPACE
C      H.....DAILY TOTAL RADIATION ON A HORIZONTAL SURFACE
C      TO.....DAILY AVERAGE TEMPERATURE
C      XLAT...LATITUDE OF THE LOCATION
C      RH0...REFLECTIVITY OF THE GROUND AROUND THE WINDOW
C      IG.....GLAZING INDEX
C           1. SINGLE GLAZE
C           2. DOUBLE GLAZE
C      SC.....SHADING COEFFICIENT
```

```

DIMENSION LDAY(12)/31,28,31,30,31,30,31,31,30,31,30,31/
DIMENSION SMONTH(12,9),SYEAR( 9),SUMMER(9)
DIMENSION XDEC(12)/-19.51,-10.28,.20,11.56,20.14,23.27,20.26,12.03
*,.37,-10.47,-19.58,-23.27/
DIMENSION R(12)/1.03,1.0207,1.0057,.9875,.9727,.967,.9692,.9785,
*,.9945,1.0133,1.0267,1.0327/
REAL US(12)/1.13,1.13,1.13,1.13,1.06,1.06,1.06,1.06,1.06,1.13,1.13
*,1.13/,SUM(9),H(12),ZKT(12),TO(12),TOT(12)
DIMENSION WAZ(8)/0.,45.,90.,135.,180.,-135.,-90.,-45./
REAL UD(12)/.65,.65,.65,.65,.61,.61,.61,.61,.61,.65,.65,.65/
REAL ORIENT(2,9)/' SOUTH      ',' SOUTHWEST ',' WEST      ',' NO
*RTHWEST ',' NORTH      ',' NORTHEAST ',' EAST      ',' SOUTHEAS
*T ','      ' HORIZ.      '/
REAL TOWN(4),XSATGS(9),XSATGD(9),ZIT(24,9),DLITE(12),XSG(9),XDG(9)
REAL RST/442.1/,PI/3,1415927/,LAT
DIMENSION R(12)/.142,.144,.156,.18,.196,.205,.207,.201,.177,.16,.149,.142/
*,.142/
REAL DNI(24),ASI(24,9),RSI(24,9),SUMD(9),SUMR(9)
M=0
XLAX=AIN(TXLAT)
LAT=(XLAX+(XLAT-XLAX)/0.6)*PI/180.
LAX=INT(XLAT)
MINUTE=(XLAT-XLAX)*100
30 FORMAT(' LOCATION '4A6,' LATITUDE'I4,' DEGREES'I4,' MINUTES'/)
CALL DIVOVF(0,0,0)
DO 1 N=1,12
RD=AIN(XDEC(N))
DEC=(RD+(XDEC(N)-RD)/0.6)*PI/180.
COSWS=-TAN(LAT)*TAN(DEC)
IF(COSWS.GT.1..OR.COSWS.LT.-1.) RETURN
IF(N.EQ.1) WRITE(6,41)
IF(N.EQ.1) WRITE(6,30) TOWN,LAX,MINUTE
WS=ACOS(COSWS)
Y=COS(LAT)*COS(DEC)*SIN(WS)+WS*SIN(LAT)*SIN(DEC)
HO=24.*R(N)*Y/PI*RST
TWS=WS*12/PI
SUNRIZ=12.-ABS(TWS)
SUNSET=12.+ABS(TWS)
COSLD=COS(LAT)*COS(DEC)
SINLD=SIN(LAT)*SIN(DEC)
S=0.
DO 500 L=1,39
WW=WS*L/40.
CZE=COSLD*COS(WW)+SINLD
PAR=-B(N)/CZE
APA=ABS(PAR)
IF(APA.GT.80.) GO TO 501
ANS=EXP(PAR)*CZE
GO TO 502
501 ANS=0.
502 S=ANS+S
500 CONTINUE
ANSO=EXP(-B(N)/(COSLD+SINLD))*(COSLD+SINLD)/2.
AI=WS/ 40.*(ANSO+S)
ZKD=ZD(ZKT(N))
HO=24./PI*R(N)*RST*(COSLD*SIN(WS)+WS*SINLD)
THH=HO*ZKT(N)
DHH=HO*(ZKT(N)-ZKD)

```

```

RHH=H0*ZKD
A=DHH/(24./PI*AI)
FAC=A/ZKT(N)
DO 2 K=1,9
DO 2 I=1,24
DNI(I)=0.
ASI(I,K)=0.
RSI(I,K)=0.
2 ZIT(I,K)=0.
DLITE(N)=2.*ABS(TWS)
DO 3 I=1,24
TIME=I-1.
WT=ABS(12.-TIME)
W=WT*PI/12.
IF(TIME-SUNRIZ) 3,3,4
4 IF(TIME-SUNSET) 5,3,3
5 COSZ=SINLD+COSLD*COS(W)
COSW=COS(DEC)*SIN(W)
COSS=SQRT(1.-COSW*COSW-COSZ*COSZ)
V=TAN(DEC)/TAN(LAT)
TEST=COS(W)-V
IF(TEST) 9,9,8
9 COSS=-COSS
8 ALT=ASIN(COSZ)
AZM=ASIN(COSW/COS(ALT))
IF(COSS) 23,24,24
23 AZM=PI-AZM
24 IF(AZM.GT.PI) AZM=2.*PI-AZM
IF(TIME.LT.12.) AZM=-AZM
AZMP=AZM*180./PI
DO 10 K=1,9
IF(K.NE.9) GO TO 25
COSTH=COSZ
GO TO 26
25 CONTINUE
SAZM=AZM-WAZ(K)/180.*PI
SAZMP=SAZM*180./PI
ALTP=ALT*180./PI
COSTH=COS(SAZM)*COS(ALT)
26 CONTINUE
IF(COSTH.LE.0.) COSTH=0.
THP=ACOS(COSTH)*180./PI
PAR2=-B(N)/COSZ
AP2=ABS(PAR2)
IF(AP2.GT.80.) GO TO 3
DNI(I)=A*EXP(PAR2)
IF(DNI(I).LE.0.) DNI(I)=0.
DHI=DNI(I)*COSZ
IF(DHI.LE.0.) DHI=0.
ASI(I,K)=DNI(I)*COSTH
IF(ASI(I,K).LE.0.) ASI(I,K)=0.
RR=PI/24.*(COS(W)-COS(WS))/(SIN(WS)-WS*COS(WS))
IF(RR.LT.0.) RR=0.
RHI=RHH*RR
RSI(I,K)=(RHI+(RHI+DHI)*RHO)/2.
IF(K.EQ.9) RSI(I,K)=RHI
ZIT(I,K)=ASI(I,K)+RSI(I,K)
10 CONTINUE

```



```

3 CONTINUE
  IF(M.EQ.1) GO TO 42
  DO 40 I=4,10,3
  IF(N.EQ.I) WRITE(6,41)
  IF(N.EQ.I) WRITE(6,30) TOWN,LAX,MINUTE
  IF(I.EQ.4) WRITE(6,101)
40 CONTINUE
42 IF(M.EQ.0) GO TO 43
  IF(N.EQ.1) GO TO 43
  WRITE(6,41)
  WRITE(6,30) TOWN,LAX,MINUTE
  WRITE(6,101)
41 FORMAT(1H1)
101 FORMAT(5F10.3,I5,7F10.3)
43 WRITE(6,31) N,H0,T0(N),TOT(N),ZKT(N),ZKD
31 FORMAT('/' MONTH'I4,' H0'F7.0,' T0N'F7.0,' TOT'F7.0,
*' KT'F10.3,
*' KD'F10.3/'/' ORIENTATION'31X,'HOURLY SOLAR RADIATION'31X,'DAI
*LY TOTAL SAG/DAYTIME SAG/ALL DAY'
* /12X,'4 5 6 7 8 9 10 1
*1 12 13 14 15 16 17 18 19 20 RADIATION SATG
*S SATGD SATGS SATGD'/11X,83('-'))
506 DO 12 K=1,9
  SUMN=0.
  SUMD(K)=0.
  SUMR(K)=0.
  SUM(K)=0.
  DO 14 I=1,24
  SUMN=SUMN+DNI(I)
  SUMD(K)=SUMD(K)+ASI(I,K)
  SUMR(K)=SUMR(K)+RSI(I,K)
14 SUM(K)=SUM(K)+ZIT(I,K)
  IF(M.EQ.1.AND.K.EQ.1) WRITE(6,505)(DNI(I),I=5,21),SUMN
505 FORMAT (' NORM.DIR.'F4.0,16F5.0,F10.0)
  SMONTH(N,K)=SUM(K)*.87*LDAY(N)/12000.
  SATGS=T0(N)+SUM(K)/DLITE(N)/US(N)*0.87
  SATGD=T0(N)+SUM(K)/DLITE(N)*SC/UD(N)*0.87
  XSATGS(K)=SATGS
  XSATGD(K)=SATGD
  XSG(K)=TOT(N)+SUM(K)/DLITE(N)/US(N)*0.87
  XDG(K)=TOT(N)+SUM(K)/DLITE(N)*SC/UD(N)*0.87
  IF(M.EQ.0)
  *WRITE(6,32)(ORIENT(J,K),J=1,2),(ZIT(I,K),I=5,21),SUM(K),XSATGS(K),
  *XSATGD(K),XSG(K),XDG(K)
  IF(M.EQ.1)
  *WRITE(6,35)(ORIENT(J,K),J=1,2),(ZIT(I,K),I=5,21),SUM(K),XSATGS(K),
  *XSATGD(K),XSG(K),XDG(K)
32 FORMAT(A6,A4,F4.0,16F5.0,F10.0,4X,4F6.0)
35 FORMAT(/2A6/3X,'TOTAL '17F5.0,F10.0,4X,4F6.0)
  IF(M.EQ.0) GO TO 12
  WRITE(6,503)(ASI(I,K),I=5,21),SUMD(K)
503 FORMAT(3X,'DIRECT'17F5.0,F10.0)
  WRITE(6,504)(RSI(I,K),I=5,21),SUMR(K)
504 FORMAT(3X,'DIFFUS'17F5.0,F10.0)
12 CONTINUE
1 CONTINUE
  RETURN
END

```

```

FUNCTION ZD(ZT)
  DIMENSION ZKT(6)/.3,.4,.5,.6,.7,.75/
  DIMENSION ZKD(6)/.179,.183,.188,.174,.149,.125/
  IF(ZT-0.3) 1,1,2
1  ZD=.179
  GO TO 10
2  IF(ZT-0.75) 3,3,4
4  ZD=.125
  GO TO 10
3  DO 20 J=2,6
    T1=ZT-ZKT(J-1)
    T2=ZT-ZKT(J)
    TEST=T1*T2
    IF(TEST) 5,6,20
5  Y1=ZKD(J-1)
    Y2=ZKD(J)
    ZD=Y1+(Y2-Y1)*(ZT-ZKT(J-1))/(ZKT(J)-ZKT(J-1))
    GO TO 20
6  IF(T1) 8,9,8
9  ZD=ZKD(J-1)
    GO TO 20
8  ZD=ZKD(J)
20 CONTINUE
10 RETURN
END

```

Albuquerque  
Annette Is.  
Apalachicola  
Astoria, O  
Atlanta  
Bethel Alas  
Bismark  
Blue Hill Mas  
Boise  
Boston  
Brownsville  
Caribou  
Charleston SC  
Cleveland  
Columbia Mo  
Columbus O  
Davis  
Dodge City  
E. Lansing  
E. Warham  
ElPaso  
Ely  
Fairbanks  
Ft.Worth  
Fresno  
Gainsville  
Glasgow, Mont  
Gnd Jnc  
Gnd Lake, Col  
Grt Falls, Mont  
Greensboro NC  
Griffin Geo  
Hattaras NC  
Indianop@lis  
Inyokern  
Ithaca, NY  
Lake Charles  
Lander Wyo  
Las Vegas Nev  
Lamont  
Lexington  
Lincoln, N  
Little Rock  
Los Angeles  
Madison  
Matanuska, Ala  
Medford  
Maimi  
Midland

## THE EIGHTY LOCATIONS

Nashville  
Newport  
New York  
Oak Ridge  
Ok City  
Portland, Maine  
Rapid City  
Riverside  
St. Cloud, Min  
Salt Lake  
San Antonio  
Santa Maria  
S. Ste. Marie Mich  
Sayville, NY  
Schenectady  
Seabrook, NJersey  
Seattle  
Spokane  
St. College, Pa  
Stillwater  
Tampa  
Tuscon  
Upton, NY  
Washington



LOCATION ALBUQUERQUE, N.M. LATITUDE 35 DEGREES 3 MINUTES

MONTH 1	HO	1699.	TOD	37.	TOT	34.	KT	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGD
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	104.	180.	230.	259.	269.	259.	230.	180.	104.	0.	0.	0.	1814.
SOUTHWEST	0.	0.	0.	0.	11.	22.	83.	146.	201.	242.	260.	246.	175.	0.	0.	0.	1387.
WEST	0.	0.	0.	0.	11.	22.	31.	37.	39.	105.	156.	181.	149.	0.	0.	0.	733.
NORTHWEST	0.	0.	0.	0.	11.	22.	31.	37.	39.	37.	31.	23.	43.	0.	0.	0.	277.
NORTH	0.	0.	0.	0.	11.	22.	31.	37.	39.	37.	31.	22.	11.	0.	0.	0.	244.
NORTHEAST	0.	0.	0.	0.	43.	23.	31.	37.	39.	37.	31.	22.	11.	0.	0.	0.	277.
EAST	0.	0.	0.	0.	149.	181.	156.	105.	39.	37.	31.	22.	11.	0.	0.	0.	733.
SOUTHEAST	0.	0.	0.	0.	175.	246.	260.	242.	201.	146.	83.	22.	11.	0.	0.	0.	1387.
HORIZ.	0.	0.	0.	0.	45.	107.	157.	189.	200.	189.	157.	107.	45.	0.	0.	0.	1196.

MONTH 2	HO	2234.	TOD	43.	TOT	39.	KT	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGD
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	29.	105.	161.	203.	228.	237.	228.	161.	105.	29.	0.	0.	1691.
SOUTHWEST	0.	0.	0.	5.	18.	30.	66.	127.	181.	222.	243.	241.	201.	77.	0.	0.	1413.
WEST	0.	0.	0.	5.	18.	30.	39.	45.	47.	112.	165.	197.	190.	83.	0.	0.	933.
NORTHWEST	0.	0.	0.	5.	18.	30.	39.	45.	47.	45.	39.	55.	78.	43.	0.	0.	447.
NORTH	0.	0.	0.	5.	18.	30.	39.	45.	47.	45.	39.	30.	18.	5.	0.	0.	324.
NORTHEAST	0.	0.	0.	43.	78.	55.	39.	45.	47.	45.	39.	30.	18.	5.	0.	0.	447.
EAST	0.	0.	0.	83.	190.	197.	165.	112.	47.	45.	39.	30.	18.	5.	0.	0.	933.
SOUTHEAST	0.	0.	0.	77.	201.	241.	244.	222.	181.	127.	66.	30.	18.	5.	0.	0.	1413.
HORIZ.	0.	0.	0.	16.	80.	143.	192.	223.	234.	223.	192.	143.	80.	16.	0.	0.	1544.

MONTH	3	HO	2798.	TOD	50.	TOT	46.	KT	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD	
SOUTH	0.	0.	0.	35.	90.	141.	180.	205.	213.	205.	180.	141.	90.	35.	0.	0.	0.	147.	226.	95.	134.	
SOUTHWEST	0.	0.	0.	12.	25.	37.	46.	109.	166.	211.	237.	240.	213.	140.	0.	0.	0.	142.	217.	92.	130.	
WEST	0.	0.	0.	12.	25.	37.	46.	52.	54.	124.	182.	220.	226.	170.	0.	0.	0.	123.	183.	83.	113.	
NORTHWEST	0.	0.	0.	12.	25.	37.	46.	52.	54.	52.	47.	93.	121.	107.	0.	0.	0.	91.	125.	67.	84.	
NORTH	0.	0.	0.	12.	25.	37.	46.	52.	54.	52.	46.	37.	25.	12.	0.	0.	0.	75.	96.	59.	69.	
NORTHEAST	0.	0.	0.	107.	121.	93.	47.	52.	54.	52.	46.	37.	25.	12.	0.	0.	0.	91.	125.	67.	84.	
EAST	0.	0.	0.	170.	226.	220.	182.	124.	54.	52.	46.	37.	25.	12.	0.	0.	0.	123.	183.	83.	113.	
SOUTHEAST	0.	0.	0.	140.	213.	240.	237.	211.	166.	109.	46.	37.	25.	12.	0.	0.	0.	142.	217.	92.	130.	
HORIZ.	0.	0.	0.	49.	121.	187.	238.	270.	281.	270.	238.	187.	121.	49.	0.	0.	0.	179.	284.	111.	163.	

[illegible]

LOCATION	ALBUQUERQUE, N.M.			LATITUDE 35 DEGREES 3 MINUTES												SAG/DAYTIME SAG/ALL DAY							
MONTH	7	HO	362R.	TOD	83.	TOT	79.	KT	HOURLY SOLAR RADIATION								KD	.150		SATGS	SATGD	SATGS	SATGD
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SATGS	SATGD	SATGS	SATGD	
SOUTH	0.	0.	10.	23.	36.	69.	100.	120.	127.	120.	100.	69.	36.	23.	10.	0.	0.	844.	132.	170.	108.	130.	
SOUTHWEST	0.	0.	10.	23.	36.	47.	55.	60.	108.	146.	170.	176.	161.	125.	62.	0.	0.	1179.	152.	205.	119.	150.	
WEST	0.	0.	10.	23.	36.	47.	55.	60.	62.	122.	172.	206.	217.	194.	116.	0.	0.	1321.	160.	219.	124.	159.	
NORTHWEST	0.	0.	10.	23.	36.	47.	55.	60.	62.	62.	106.	143.	166.	164.	108.	0.	0.	1042.	144.	191.	115.	142.	
NORTH	0.	0.	42.	51.	39.	47.	55.	60.	62.	60.	55.	47.	39.	51.	42.	0.	0.	651.	121.	150.	101.	118.	
NORTHEAST	0.	0.	108.	164.	166.	143.	106.	62.	62.	60.	55.	47.	36.	23.	10.	0.	0.	1042.	144.	191.	115.	142.	
EAST	0.	0.	116.	194.	217.	206.	172.	122.	62.	60.	55.	47.	36.	23.	10.	0.	0.	1321.	160.	219.	124.	159.	
SOUTHEAST	0.	0.	62.	125.	161.	176.	170.	146.	108.	60.	55.	47.	36.	23.	10.	0.	0.	1179.	152.	205.	119.	150.	
HORIZ.	0.	0.	36.	101.	168.	227.	272.	301.	311.	301.	272.	227.	168.	101.	36.	0.	0.	2521.	230.	344.	165.	231.	

MONTH	8	HO	329R.	TOD	81.	TOT	77.	KT	HOURLY SOLAR RADIATION								KD	.145		SAG/DAYTIME SAG/ALL DAY		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	5.	18.	56.	99.	134.	156.	144.	156.	134.	99.	56.	18.	5.	0.	0.	1103.	149.	202.	115.	144.
SOUTHWEST	0.	0.	5.	18.	31.	43.	52.	80.	133.	175.	200.	204.	185.	135.	41.	0.	0.	1303.	162.	224.	121.	156.
WEST	0.	0.	5.	18.	31.	43.	52.	57.	59.	125.	179.	215.	223.	189.	66.	0.	0.	1263.	159.	220.	120.	153.
NORTHWEST	0.	0.	5.	18.	31.	43.	52.	57.	59.	57.	84.	125.	149.	142.	56.	0.	0.	880.	136.	178.	107.	130.
NORTH	0.	0.	16.	23.	31.	43.	52.	57.	59.	57.	52.	43.	31.	23.	16.	0.	0.	504.	112.	136.	94.	107.
NORTHEAST	0.	0.	56.	142.	149.	125.	84.	57.	59.	57.	52.	43.	31.	18.	5.	0.	0.	880.	136.	178.	107.	130.
EAST	0.	0.	66.	189.	223.	215.	179.	125.	59.	57.	52.	43.	31.	18.	5.	0.	0.	1263.	159.	220.	120.	153.
SOUTHEAST	0.	0.	41.	135.	185.	204.	200.	175.	133.	80.	52.	43.	31.	18.	5.	0.	0.	1303.	162.	224.	121.	156.
HORIZ.	0.	0.	15.	80.	150.	214.	263.	294.	304.	294.	263.	214.	150.	80.	15.	0.	0.	2335.	226.	338.	157.	218.

MONTH	9	HO	278R.	TOD	74.	TOT	70.	KT	HOURLY SOLAR RADIATION								KD	.136		SAG/DAYTIME SAG/ALL DAY		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	33.	89.	140.	180.	206.	215.	206.	180.	140.	89.	33.	0.	0.	0.	1512.	177.	255.	122.	161.
SOUTHWEST	0.	0.	0.	11.	24.	36.	45.	109.	167.	212.	239.	241.	212.	134.	0.	0.	0.	1431.	171.	246.	119.	156.
WEST	0.	0.	0.	11.	24.	36.	45.	51.	53.	124.	184.	221.	225.	163.	0.	0.	0.	1139.	151.	211.	109.	139.
NORTHWEST	0.	0.	0.	11.	24.	36.	45.	51.	53.	51.	48.	94.	121.	103.	0.	0.	0.	638.	117.	150.	92.	108.
NORTH	0.	0.	0.	11.	24.	36.	45.	51.	53.	51.	45.	36.	24.	11.	0.	0.	0.	390.	100.	121.	83.	93.
NORTHEAST	0.	0.	0.	103.	121.	94.	48.	51.	53.	51.	45.	36.	24.	11.	0.	0.	0.	638.	117.	150.	92.	108.
EAST	0.	0.	0.	163.	225.	221.	184.	124.	53.	51.	45.	36.	24.	11.	0.	0.	0.	1139.	151.	211.	109.	139.
SOUTHEAST	0.	0.	0.	134.	212.	241.	239.	217.	167.	109.	45.	36.	24.	11.	0.	0.	0.	1431.	171.	246.	119.	156.
HORIZ.	0.	0.	0.	47.	121.	188.	240.	273.	285.	273.	240.	188.	121.	47.	0.	0.	0.	2025.	211.	317.	139.	192.

LOCATION		ALBUQUERQUE, N.M.		LATITUDE		35 DEGREES		3 MINUTES																
MONTH	10	HO	2199.	TOD	62.	TOT	58.	KT	.711	KD	.144													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH	0.	0.	0.	0.	0.	26.	106.	167.	211.	238.	247.	238.	211.	167.	106.	26.	0.	0.	1742.	184.	284.	114.	160.	
SOUTHWEST	0.	0.	0.	0.	0.	5.	17.	29.	67.	131.	188.	231.	253.	249.	203.	68.	0.	0.	1442.	163.	246.	104.	142.	
WEST	0.	0.	0.	0.	0.	5.	17.	29.	39.	44.	46.	115.	170.	202.	191.	73.	0.	0.	932.	127.	181.	88.	112.	
NORTHWEST	0.	0.	0.	0.	0.	5.	17.	29.	39.	44.	46.	44.	39.	54.	77.	38.	0.	0.	433.	92.	117.	72.	83.	
NORTH	0.	0.	0.	0.	0.	5.	17.	29.	39.	44.	46.	44.	39.	20.	17.	5.	0.	0.	315.	84.	102.	68.	77.	
NORTHEAST	0.	0.	0.	0.	0.	38.	77.	54.	39.	44.	46.	44.	39.	29.	17.	5.	0.	0.	433.	92.	117.	72.	83.	
EAST	0.	0.	0.	0.	0.	73.	191.	202.	170.	115.	46.	44.	39.	29.	17.	5.	0.	0.	932.	127.	181.	88.	112.	
SOUTHEAST	0.	0.	0.	0.	0.	68.	203.	249.	253.	231.	188.	131.	67.	20.	17.	5.	0.	0.	1442.	163.	246.	104.	142.	
HORIZ.	0.	0.	0.	0.	0.	14.	79.	144.	196.	229.	240.	229.	196.	144.	79.	14.	0.	0.	1563.	172.	261.	108.	149.	
MONTH	11	HO	1687.	TOD	48.	TOT	44.	KT	.684	KD	.153													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH	0.	0.	0.	0.	0.	0.	97.	172.	220.	249.	258.	249.	220.	172.	97.	0.	0.	0.	1736.	181.	290.	100.	145.	
SOUTHWEST	0.	0.	0.	0.	0.	0.	11.	22.	81.	141.	194.	232.	249.	234.	163.	0.	0.	0.	1329.	150.	233.	87.	121.	
WEST	0.	0.	0.	0.	0.	0.	11.	22.	31.	37.	39.	102.	150.	173.	139.	0.	0.	0.	705.	102.	146.	67.	85.	
NORTHWEST	0.	0.	0.	0.	0.	0.	11.	22.	31.	37.	39.	37.	31.	23.	40.	0.	0.	0.	273.	69.	86.	53.	60.	
NORTH	0.	0.	0.	0.	0.	0.	11.	22.	31.	37.	39.	37.	31.	22.	11.	0.	0.	0.	243.	66.	82.	52.	60.	
NORTHEAST	0.	0.	0.	0.	0.	0.	40.	23.	31.	37.	39.	37.	31.	22.	11.	0.	0.	0.	273.	69.	86.	53.	60.	
EAST	0.	0.	0.	0.	0.	0.	139.	173.	150.	102.	39.	37.	31.	22.	11.	0.	0.	0.	705.	102.	146.	67.	85.	
SOUTHEAST	0.	0.	0.	0.	0.	0.	163.	234.	249.	232.	194.	141.	81.	22.	11.	0.	0.	0.	1329.	150.	233.	87.	121.	
HORIZ.	0.	0.	0.	0.	0.	0.	43.	103.	152.	183.	193.	183.	152.	103.	43.	0.	0.	0.	1153.	136.	209.	81.	111.	
MONTH	12	HO	1490.	TOD	39.	TOT	36.	KT	.704	KD	.147													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH	0.	0.	0.	0.	0.	0.	91.	182.	236.	267.	277.	267.	236.	182.	91.	0.	0.	0.	1829.	185.	305.	95.	143.	
SOUTHWEST	0.	0.	0.	0.	0.	0.	8.	27.	89.	152.	207.	246.	261.	241.	146.	0.	0.	0.	1377.	149.	239.	80.	116.	
WEST	0.	0.	0.	0.	0.	0.	8.	19.	28.	34.	36.	100.	150.	170.	120.	0.	0.	0.	666.	93.	136.	57.	75.	
NORTHWEST	0.	0.	0.	0.	0.	0.	8.	19.	28.	34.	36.	34.	28.	19.	29.	0.	0.	0.	235.	58.	73.	44.	50.	
NORTH	0.	0.	0.	0.	0.	0.	8.	19.	28.	34.	36.	34.	28.	19.	8.	0.	0.	0.	214.	57.	71.	43.	48.	
NORTHEAST	0.	0.	0.	0.	0.	0.	29.	19.	28.	34.	36.	34.	28.	19.	8.	0.	0.	0.	235.	58.	73.	44.	50.	
EAST	0.	0.	0.	0.	0.	0.	120.	170.	150.	100.	36.	34.	28.	19.	8.	0.	0.	0.	666.	93.	136.	57.	75.	
SOUTHEAST	0.	0.	0.	0.	0.	0.	146.	241.	261.	246.	207.	152.	89.	27.	8.	0.	0.	0.	1377.	149.	239.	80.	116.	
HORIZ.	0.	0.	0.	0.	0.	0.	31.	91.	140.	172.	183.	172.	140.	91.	31.	0.	0.	0.	1051.	123.	192.	70.	97.	



ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	176.	162.	147.	126.	120.	124.	132.	149.	177.	184.	181.	185.	155.
SOUTHWEST	144.	142.	139.	139.	140.	147.	152.	162.	171.	163.	150.	149.	150.
WEST	94.	109.	123.	137.	149.	160.	160.	159.	151.	127.	102.	93.	130.
NORTHWEST	58.	75.	91.	113.	132.	145.	144.	136.	117.	92.	69.	58.	102.
NORTH	56.	66.	75.	89.	108.	121.	121.	112.	100.	84.	66.	57.	88.
NORTHEAST	58.	75.	91.	113.	132.	145.	144.	136.	117.	92.	69.	58.	102.
EAST	94.	109.	123.	137.	149.	160.	160.	159.	151.	127.	102.	93.	130.
SOUTHEAST	144.	142.	142.	139.	140.	147.	152.	162.	171.	163.	150.	149.	150.
HORIZ.	129.	151.	179.	200.	221.	237.	230.	226.	211.	172.	136.	123.	185.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	290.	258.	226.	180.	158.	158.	170.	202.	255.	284.	290.	305.	231.
SOUTHWEST	230.	223.	217.	203.	195.	199.	205.	224.	246.	246.	233.	239.	222.
WEST	139.	162.	183.	199.	210.	222.	219.	220.	211.	181.	146.	136.	186.
NORTHWEST	76.	100.	125.	156.	180.	196.	191.	178.	150.	117.	86.	73.	136.
NORTH	71.	84.	96.	113.	137.	153.	150.	136.	121.	102.	82.	71.	110.
NORTHEAST	76.	100.	125.	156.	180.	196.	191.	178.	150.	117.	86.	73.	136.
EAST	139.	162.	183.	199.	210.	222.	219.	220.	211.	181.	146.	136.	186.
SOUTHEAST	230.	223.	217.	203.	195.	199.	205.	224.	246.	246.	233.	239.	222.
HORIZ.	204.	239.	284.	315.	338.	357.	344.	338.	317.	261.	209.	192.	283.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	92.	94.	95.	92.	95.	102.	108.	115.	122.	114.	100.	95.	102.
SOUTHWEST	78.	85.	92.	99.	107.	116.	119.	121.	119.	104.	87.	80.	101.
WEST	57.	69.	83.	98.	112.	123.	124.	120.	109.	88.	67.	57.	92.
NORTHWEST	43.	54.	67.	85.	102.	114.	115.	107.	92.	72.	53.	44.	79.
NORTH	42.	50.	59.	72.	88.	100.	101.	94.	83.	68.	52.	43.	71.
NORTHEAST	43.	54.	67.	85.	102.	114.	115.	107.	92.	72.	53.	44.	79.
EAST	57.	69.	83.	98.	112.	123.	124.	120.	109.	88.	67.	57.	92.
SOUTHEAST	78.	85.	92.	99.	107.	116.	119.	121.	119.	104.	87.	80.	101.
HORIZ.	72.	89.	111.	132.	154.	169.	165.	157.	139.	108.	81.	70.	121.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	139.	138.	134.	121.	117.	122.	130.	144.	161.	160.	145.	143.	138.
SOUTHWEST	115.	122.	130.	134.	139.	147.	150.	156.	156.	142.	121.	116.	136.
WEST	76.	94.	113.	132.	148.	160.	159.	153.	139.	112.	85.	75.	120.
NORTHWEST	50.	66.	84.	108.	130.	145.	142.	130.	108.	83.	60.	50.	96.
NORTH	48.	58.	69.	85.	105.	119.	118.	107.	93.	77.	58.	48.	82.
NORTHEAST	50.	66.	84.	108.	130.	145.	142.	130.	108.	83.	60.	50.	96.
EAST	76.	94.	113.	132.	148.	160.	159.	153.	139.	112.	85.	75.	120.
SOUTHEAST	115.	122.	130.	134.	139.	147.	150.	156.	156.	142.	121.	116.	136.
HORIZ.	103.	129.	163.	195.	222.	241.	231.	218.	192.	149.	111.	97.	171.

LOCATION	ANNETTE IS., ALASKA		LATITUDE 55 DEGREES		1 MINUTES																	
MONTH 1	HO 611.	TOD 36.	TOT 35.	KT .427	KD .184																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	DAY
SOUTH	0.	0.	0.	0.	0.	48.	104.	135.	145.	135.	104.	48.	0.	0.	0.	0.	0.	719.	106.	164.	5.	77.
SOUTHWEST	0.	0.	0.	0.	0.	9.	41.	78.	107.	122.	113.	63.	0.	0.	0.	0.	0.	533.	88.	131.	52.	66.
WEST	0.	0.	0.	0.	0.	6.	12.	15.	17.	46.	62.	44.	0.	0.	0.	0.	0.	202.	56.	72.	41.	46.
NORTHWEST	0.	0.	0.	0.	0.	6.	12.	15.	17.	15.	12.	6.	0.	0.	0.	0.	0.	82.	44.	50.	37.	39.
NORTH	0.	0.	0.	0.	0.	6.	12.	15.	17.	15.	12.	6.	0.	0.	0.	0.	0.	82.	44.	50.	37.	39.
NORTHEAST	0.	0.	0.	0.	0.	6.	12.	15.	17.	15.	12.	6.	0.	0.	0.	0.	0.	82.	44.	50.	37.	39.
EAST	0.	0.	0.	0.	0.	44.	62.	46.	17.	15.	12.	6.	0.	0.	0.	0.	0.	202.	56.	72.	41.	46.
SOUTHEAST	0.	0.	0.	0.	0.	63.	113.	122.	107.	78.	41.	9.	0.	0.	0.	0.	0.	533.	88.	131.	52.	66.
HORIZ.	0.	0.	0.	0.	0.	15.	36.	51.	56.	51.	36.	15.	0.	0.	0.	0.	0.	260.	41.	82.	43.	50.
MONTH 2	HO 1205.	TOD 38.	TOT 36.	KT .415	KD .184																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	DAY
SOUTH	0.	0.	0.	0.	36.	79.	109.	128.	134.	128.	109.	79.	36.	0.	0.	0.	0.	837.	102.	155.	63.	85.
SOUTHWEST	0.	0.	0.	0.	7.	15.	45.	76.	102.	118.	121.	106.	62.	0.	0.	0.	0.	654.	88.	129.	57.	74.
WEST	0.	0.	0.	0.	7.	15.	21.	24.	26.	54.	75.	81.	56.	0.	0.	0.	0.	358.	65.	88.	48.	57.
NORTHWEST	0.	0.	0.	0.	7.	15.	21.	24.	26.	24.	21.	16.	21.	0.	0.	0.	0.	175.	51.	62.	42.	46.
NORTH	0.	0.	0.	0.	7.	15.	21.	24.	26.	24.	21.	15.	7.	0.	0.	0.	0.	160.	50.	60.	41.	45.
NORTHEAST	0.	0.	0.	0.	21.	16.	21.	24.	26.	24.	21.	15.	7.	0.	0.	0.	0.	175.	51.	62.	42.	46.
EAST	0.	0.	0.	0.	56.	81.	75.	54.	26.	24.	21.	15.	7.	0.	0.	0.	0.	358.	65.	88.	48.	57.
SOUTHEAST	0.	0.	0.	0.	62.	106.	121.	118.	102.	76.	45.	15.	7.	0.	0.	0.	0.	654.	88.	129.	57.	74.
HORIZ.	0.	0.	0.	0.	19.	44.	66.	79.	84.	79.	66.	44.	19.	0.	0.	0.	0.	499.	76.	108.	52.	65.
MONTH 3	HO 1972.	TOD 40.	TOT 38.	KT .492	KD .188																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	DAY
SOUTH	0.	0.	0.	24.	65.	104.	135.	154.	161.	154.	135.	104.	65.	24.	0.	0.	0.	1126.	112.	170.	74.	104.
SOUTHWEST	0.	0.	0.	9.	18.	26.	54.	92.	125.	147.	156.	149.	122.	68.	0.	0.	0.	967.	101.	152.	69.	94.
WEST	0.	0.	0.	9.	18.	26.	32.	36.	38.	75.	105.	122.	118.	78.	0.	0.	0.	658.	82.	116.	59.	76.
NORTHWEST	0.	0.	0.	9.	18.	26.	32.	36.	38.	36.	32.	39.	56.	47.	0.	0.	0.	370.	63.	83.	50.	60.
NORTH	0.	0.	0.	9.	18.	26.	32.	36.	38.	36.	32.	26.	18.	9.	0.	0.	0.	281.	58.	72.	47.	54.
NORTHEAST	0.	0.	0.	47.	56.	39.	32.	36.	38.	36.	32.	26.	18.	9.	0.	0.	0.	370.	63.	83.	50.	60.
EAST	0.	0.	0.	78.	118.	122.	105.	75.	38.	36.	32.	26.	18.	9.	0.	0.	0.	658.	82.	116.	59.	76.
SOUTHEAST	0.	0.	0.	68.	122.	149.	156.	147.	125.	92.	54.	26.	18.	9.	0.	0.	0.	967.	101.	152.	69.	94.
HORIZ.	0.	0.	0.	24.	58.	90.	115.	130.	136.	130.	115.	90.	58.	24.	0.	0.	0.	969.	102.	152.	69.	95.

LOCATION ANNETTE IS., ALASKA LATITUDE 55 DEGREES 1 MINUTES

MONTH	4	HO	2844.	TOD	44.	TOT	43.	KT	.507	KD	.187						
HOURLY SOLAR RADIATION																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	1.	9.	29.	66.	101.	129.	147.	154.	147.	129.	101.	66.	29.	9.	1.	0.
SOUTHWEST	0.	1.	9.	19.	28.	36.	51.	90.	122.	145.	156.	153.	135.	101.	51.	1.	0.
WEST	0.	1.	9.	19.	28.	36.	42.	46.	47.	85.	116.	136.	141.	125.	77.	1.	0.
NORTHWEST	0.	1.	9.	19.	28.	36.	42.	46.	47.	46.	42.	61.	81.	87.	63.	1.	0.
NORTH	0.	1.	18.	19.	28.	36.	42.	46.	47.	46.	42.	36.	28.	19.	18.	1.	0.
NORTHEAST	0.	1.	63.	87.	81.	61.	42.	46.	47.	46.	42.	36.	28.	19.	9.	1.	0.
EAST	0.	1.	77.	125.	141.	136.	116.	85.	47.	46.	42.	36.	28.	19.	9.	1.	0.
SOUTHEAST	0.	1.	51.	101.	135.	153.	156.	145.	122.	90.	51.	36.	28.	19.	9.	1.	0.
HORIZ.	0.	2.	26.	61.	97.	128.	153.	168.	173.	168.	153.	128.	97.	61.	26.	2.	0.
DAILY TOTAL RADIATION												1119.	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGD		
												104.	153.	78.	108.		
												103.	152.	78.	107.		
												93.	133.	72.	96.		
												77.	104.	62.	78.		
												67.	86.	56.	67.		
												77.	104.	62.	78.		
												93.	133.	72.	96.		
												103.	152.	78.	107.		
												142.	185.	89.	127.		

DAILY TOTAL RADIATION

SAG/DAYTIME SATGS

SAG/ALL DAY SATGS

1119. 104. 153. 78. 108.

1100. 103. 152. 78. 107.

910. 93. 133. 72. 96.

610. 77. 104. 62. 78.

426. 67. 86. 56. 67.

610. 77. 104. 62. 78.

910. 93. 133. 72. 96.

1100. 103. 152. 78. 107.

1442. 122. 185. 89. 127.

MONTH	5	HO	3481.	TOD	51.	TOT	49.	KT	.484	KD	.187						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	1.	8.	16.	25.	57.	88.	112.	127.	133.	127.	112.	88.	57.	25.	16.	8.	1.
SOUTHWEST	1.	8.	16.	25.	34.	41.	47.	80.	109.	129.	139.	137.	123.	98.	64.	24.	1.
WEST	1.	8.	16.	25.	34.	41.	47.	50.	51.	85.	112.	130.	137.	128.	101.	50.	1.
NORTHWEST	1.	8.	16.	25.	34.	41.	47.	50.	51.	50.	47.	71.	90.	98.	89.	51.	1.
NORTH	1.	26.	34.	25.	34.	41.	47.	50.	51.	50.	47.	41.	34.	25.	34.	26.	1.
NORTHEAST	1.	51.	89.	98.	90.	71.	47.	50.	51.	50.	47.	41.	34.	25.	16.	8.	1.
EAST	1.	50.	101.	128.	137.	130.	112.	85.	51.	50.	47.	41.	34.	25.	16.	8.	1.
SOUTHEAST	1.	24.	64.	98.	123.	137.	139.	129.	109.	80.	47.	41.	34.	25.	16.	8.	1.
HORIZ.	1.	18.	49.	82.	115.	143.	165.	178.	183.	178.	165.	143.	115.	82.	49.	18.	1.

DAILY TOTAL RADIATION

SAG/DAYTIME SATGS

SAG/ALL DAY SATGS

1001. 102. 140. 83. 109.

1076. 105. 147. 86. 114.

1017. 102. 142. 84. 110.

769. 90. 120. 75. 95.

567. 80. 102. 68. 83.

769. 90. 120. 75. 95.

1017. 102. 142. 84. 110.

1076. 105. 147. 86. 114.

1684. 136. 201. 10. 151.

MONTH	6	HO	3733.	TOD	56.	TOT	54.	KT	.441	KD	.185						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	3.	10.	18.	27.	51.	77.	97.	111.	115.	111.	97.	77.	51.	27.	18.	10.	3.
SOUTHWEST	3.	10.	18.	27.	34.	41.	46.	72.	96.	113.	121.	120.	108.	87.	59.	27.	4.
WEST	3.	10.	18.	27.	34.	41.	46.	50.	51.	79.	102.	117.	122.	115.	95.	57.	8.
NORTHWEST	3.	10.	18.	27.	34.	41.	46.	50.	51.	50.	49.	70.	85.	92.	86.	59.	9.
NORTH	7.	32.	37.	30.	34.	41.	46.	50.	51.	50.	46.	41.	34.	30.	37.	32.	7.
NORTHEAST	9.	59.	86.	92.	85.	70.	49.	50.	51.	50.	46.	41.	34.	27.	18.	10.	3.
EAST	8.	57.	95.	115.	122.	117.	102.	79.	51.	50.	46.	41.	34.	27.	18.	10.	3.
SOUTHEAST	4.	27.	59.	87.	108.	120.	121.	113.	96.	72.	46.	41.	34.	27.	18.	10.	3.
HORIZ.	5.	25.	53.	83.	111.	136.	156.	168.	172.	168.	156.	136.	111.	83.	53.	25.	5.
												</					

DAILY TOTAL RADIATION

SAG/DAYTIME SATGS

SAG/ALL DAY SATGS

901. 99. 133. 85. 109.

987. 104. 140. 88. 114.

974. 103. 139. 88. 113.

780. 94. 122. 81. 101.

607. 85. 108. 75. 91.

780. 94. 122. 81. 101.

974. 103. 139. 88. 113.

987. 104. 140. 88. 114.

1647. 135. 196. 111. 154.

LOCATION	ANNETTE IS., ALASKA		LATITUDE		55 DEGREES		1 MINUTES																				
MONTH	7	HO	3485.	TOD	59.	TOT	57.	KT	.454	KD	.186																
ORIENTATION	4	5	6	7	8	9	10	11	HOURLY SOLAR RADIATION								15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/ALL DAY			
									12	13	14	15	16	17	18	19								20	SATGS	SATGD	SAT6S
SOUTH	1.	8.	16.	25.	54.	82.	104.	118.	123.	118.	104.	82.	54.	25.	16.	8.	1.	936.	106.	142.	89.	113.	106.	142.	89.	113.	
SOUTHWEST	1.	8.	16.	25.	33.	40.	45.	76.	102.	120.	128.	126.	113.	90.	58.	22.	1.	1003.	109.	148.	91.	117.	109.	148.	91.	117.	
WEST	1.	8.	16.	25.	33.	40.	45.	49.	50.	80.	104.	120.	126.	117.	91.	44.	1.	949.	106.	143.	89.	114.	106.	143.	89.	114.	
NORTHWEST	1.	8.	16.	25.	33.	40.	45.	49.	50.	49.	46.	67.	84.	90.	81.	45.	1.	728.	95.	123.	82.	101.	95.	123.	82.	101.	
NORTH	1.	24.	32.	25.	33.	40.	45.	49.	50.	49.	45.	40.	33.	25.	32.	24.	1.	546.	86.	107.	75.	90.	86.	107.	75.	90.	
NORTHEAST	1.	45.	81.	90.	84.	67.	46.	49.	50.	49.	45.	40.	33.	25.	16.	8.	1.	728.	95.	123.	82.	101.	95.	123.	82.	101.	
EAST	1.	44.	91.	117.	126.	120.	104.	80.	50.	49.	45.	40.	33.	25.	16.	8.	1.	949.	106.	143.	89.	114.	106.	143.	89.	114.	
SOUTHEAST	1.	22.	58.	90.	113.	126.	128.	120.	102.	76.	45.	40.	33.	25.	16.	8.	1.	1003.	109.	148.	91.	117.	109.	148.	91.	117.	
HORIZ.	1.	18.	46.	77.	107.	134.	154.	167.	172.	167.	154.	134.	107.	77.	46.	18.	1.	1582.	138.	199.	111.	152.	138.	199.	111.	152.	
MONTH	8	HO	2827.	TOD	60.	TOT	58.	KT	.427	KD	.184																
ORIENTATION	4	5	6	7	8	9	10	11	HOURLY SOLAR RADIATION								15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/ALL DAY			
									12	13	14	15	16	17	18	19								20	SATGS	SATGD	SAT6S
SOUTH	0.	1.	9.	25.	54.	82.	105.	119.	124.	119.	105.	82.	54.	25.	9.	1.	0.	915.	112.	152.	89.	113.	112.	152.	89.	113.	
SOUTHWEST	0.	1.	9.	18.	26.	33.	46.	76.	101.	118.	125.	121.	106.	78.	38.	1.	0.	896.	111.	150.	89.	112.	111.	150.	89.	112.	
WEST	0.	1.	9.	18.	26.	33.	39.	42.	44.	72.	95.	109.	110.	96.	56.	1.	0.	752.	103.	136.	84.	103.	103.	136.	84.	103.	
NORTHWEST	0.	1.	9.	18.	26.	33.	39.	42.	44.	42.	39.	52.	66.	68.	46.	1.	0.	527.	90.	113.	76.	90.	90.	113.	76.	90.	
NORTH	0.	1.	15.	18.	26.	33.	39.	42.	44.	42.	39.	33.	26.	18.	15.	1.	0.	393.	82.	99.	71.	82.	82.	99.	71.	82.	
NORTHEAST	0.	1.	46.	68.	66.	52.	39.	42.	44.	42.	39.	33.	26.	18.	9.	1.	0.	527.	90.	113.	76.	90.	90.	113.	76.	90.	
EAST	0.	1.	56.	96.	110.	109.	95.	72.	44.	42.	39.	33.	26.	18.	9.	1.	0.	752.	103.	136.	84.	103.	103.	136.	84.	103.	
SOUTHEAST	0.	1.	38.	78.	106.	121.	125.	118.	101.	76.	46.	33.	26.	18.	9.	1.	0.	896.	111.	150.	89.	112.	111.	150.	89.	112.	
HORIZ.	0.	2.	22.	51.	81.	107.	128.	140.	145.	140.	128.	107.	81.	51.	22.	2.	0.	1207.	129.	182.	99.	131.	129.	182.	99.	131.	
MONTH	9	HO	1972.	TOD	55.	TOT	53.	KT	.449	KD	.185																
ORIENTATION	4	5	6	7	8	9	10	11	HOURLY SOLAR RADIATION								15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/ALL DAY			
									12	13	14	15	16	17	18	19								20	SATGS	SATGD	SAT6S
SOUTH	0.	0.	0.	20.	57.	91.	119.	137.	143.	137.	119.	91.	57.	20.	0.	0.	0.	992.	122.	174.	87.	113.	122.	174.	87.	113.	
SOUTHWEST	0.	0.	0.	9.	17.	25.	49.	83.	111.	131.	138.	130.	105.	56.	0.	0.	0.	855.	113.	157.	82.	105.	113.	157.	82.	105.	
WEST	0.	0.	0.	9.	17.	25.	31.	35.	36.	68.	94.	107.	102.	64.	0.	0.	0.	589.	95.	125.	73.	89.	95.	125.	73.	89.	
NORTHWEST	0.	0.	0.	9.	17.	25.	31.	35.	36.	35.	31.	36.	49.	40.	0.	0.	0.	344.	78.	96.	65.	74.	78.	96.	65.	74.	
NORTH	0.	0.	0.	9.	17.	25.	31.	35.	36.	35.	31.	25.	17.	9.	0.	0.	0.	271.	73.	87.	62.	69.	73.	87.	62.	69.	
NORTHEAST	0.	0.	0.	40.	49.	36.	31.	35.	36.	35.	31.	25.	17.	9.	0.	0.	0.	344.	78.	96.	65.	74.	78.	96.	65.	74.	
EAST	0.	0.	0.	64.	102.	107.	94.	68.	36.	35.	31.	25.	17.	9.	0.	0.	0.	589.	95.	125.	73.	89.	95.	125.	73.	89.	
SOUTHEAST	0.	0.	0.	56.	105.	130.	138.	131.	111.	83.	49.	25.	17.	9.	0.	0.	0.	855.	113.	157.	82.	105.	113.	157.	82.	105.	
HORIZ.	0.	0.	1.	22.	53.	82.	104.	119.	124.	119.	104.	82.	53.	22.	1.	0.	0.	884.	115.	161.	83.	107.	115.	161.	83.	107.	



LOCATION	ANNETTE IS., ALASKA		LATITUDE		55 DEGREES		1 MINUTES													
MONTH 10	HO 1174.	TOD	48.	TOT	47.	KT	.347	KD	.181											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGD
SOUTH	0.	0.	0.	0.	25.	58.	82.	97.	102.	97.	82.	58.	25.	0.	0.	0.	0.	627.	97.	137.
SOUTHWEST	0.	0.	0.	0.	7.	14.	36.	60.	79.	90.	91.	78.	42.	0.	0.	0.	0.	496.	87.	118.
WEST	0.	0.	0.	0.	7.	14.	19.	22.	23.	44.	58.	59.	38.	0.	0.	0.	0.	283.	70.	88.
NORTHWEST	0.	0.	0.	0.	7.	14.	19.	22.	23.	22.	19.	14.	15.	0.	0.	0.	0.	156.	60.	70.
NORTH	0.	0.	0.	0.	7.	14.	19.	22.	23.	22.	19.	14.	7.	0.	0.	0.	0.	146.	60.	69.
NORTHEAST	0.	0.	0.	0.	15.	14.	19.	22.	23.	22.	19.	14.	7.	0.	0.	0.	0.	156.	60.	70.
EAST	0.	0.	0.	0.	38.	59.	58.	44.	23.	22.	19.	14.	7.	0.	0.	0.	0.	283.	70.	88.
SOUTHEAST	0.	0.	0.	0.	42.	78.	91.	90.	79.	60.	36.	14.	7.	0.	0.	0.	0.	496.	87.	118.
HORIZ.	0.	0.	0.	0.	15.	36.	53.	65.	68.	65.	53.	36.	15.	0.	0.	0.	0.	407.	80.	106.
MONTH 11	HO 602.	TOD	42.	TOT	41.	KT	.304	KD	.179											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGD
SOUTH	0.	0.	0.	0.	0.	26.	57.	75.	81.	75.	57.	26.	0.	0.	0.	0.	0.	397.	81.	113.
SOUTHWEST	0.	0.	0.	0.	0.	7.	25.	46.	61.	68.	62.	33.	0.	0.	0.	0.	0.	302.	72.	96.
WEST	0.	0.	0.	0.	0.	5.	10.	13.	14.	29.	36.	24.	0.	0.	0.	0.	0.	132.	55.	65.
NORTHWEST	0.	0.	0.	0.	0.	5.	10.	13.	14.	13.	10.	5.	0.	0.	0.	0.	0.	72.	49.	55.
NORTH	0.	0.	0.	0.	0.	5.	10.	13.	14.	13.	10.	5.	0.	0.	0.	0.	0.	72.	49.	55.
NORTHEAST	0.	0.	0.	0.	0.	5.	10.	13.	14.	13.	10.	5.	0.	0.	0.	0.	0.	72.	49.	55.
EAST	0.	0.	0.	0.	0.	24.	36.	29.	14.	13.	10.	5.	0.	0.	0.	0.	0.	132.	55.	65.
SOUTHEAST	0.	0.	0.	0.	0.	33.	62.	68.	61.	46.	25.	7.	0.	0.	0.	0.	0.	302.	72.	96.
HORIZ.	0.	0.	0.	0.	0.	11.	25.	35.	39.	35.	25.	11.	0.	0.	0.	0.	0.	182.	60.	74.
MONTH 12	HO 413.	TOD	37.	TOT	36.	KT	.361	KD	.181											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGD
SOUTH	0.	0.	0.	0.	0.	9.	68.	102.	112.	102.	68.	9.	0.	0.	0.	0.	0.	470.	90.	133.
SOUTHWEST	0.	0.	0.	0.	0.	3.	28.	59.	83.	91.	73.	12.	0.	0.	0.	0.	0.	348.	76.	108.
WEST	0.	0.	0.	0.	0.	2.	7.	11.	12.	33.	39.	8.	0.	0.	0.	0.	0.	113.	50.	60.
NORTHWEST	0.	0.	0.	0.	0.	2.	7.	11.	12.	11.	7.	2.	0.	0.	0.	0.	0.	53.	43.	48.
NORTH	0.	0.	0.	0.	0.	2.	7.	11.	12.	11.	7.	2.	0.	0.	0.	0.	0.	53.	43.	48.
NORTHEAST	0.	0.	0.	0.	0.	2.	7.	11.	12.	11.	7.	2.	0.	0.	0.	0.	0.	53.	43.	48.
EAST	0.	0.	0.	0.	0.	8.	39.	33.	12.	11.	7.	2.	0.	0.	0.	0.	0.	113.	50.	60.
SOUTHEAST	0.	0.	0.	0.	0.	12.	73.	91.	83.	59.	28.	3.	0.	0.	0.	0.	0.	348.	76.	108.
HORIZ.	0.	0.	0.	0.	0.	4.	20.	32.	37.	32.	20.	4.	0.	0.	0.	0.	0.	149.	54.	68.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	106.	102.	112.	104.	102.	99.	106.	112.	122.	97.	81.	90.	103.
SOUTHWEST	88.	88.	101.	103.	105.	104.	109.	111.	113.	87.	76.	76.	96.
WEST	56.	65.	82.	93.	102.	103.	106.	103.	95.	70.	55.	50.	82.
NORTHWEST	44.	51.	63.	77.	90.	94.	95.	90.	78.	60.	49.	43.	70.
NORTH	44.	50.	58.	67.	80.	85.	85.	82.	73.	60.	49.	43.	65.
NORTHEAST	44.	51.	63.	77.	90.	94.	95.	90.	78.	60.	49.	43.	70.
EAST	56.	65.	82.	93.	102.	103.	106.	103.	95.	70.	55.	50.	82.
SOUTHEAST	88.	88.	101.	103.	105.	104.	109.	111.	113.	87.	72.	76.	96.
HORIZ.	61.	76.	102.	122.	136.	135.	138.	129.	115.	80.	60.	54.	101.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	164.	155.	170.	153.	140.	133.	142.	152.	174.	137.	113.	133.	147.
SOUTHWEST	131.	129.	152.	152.	147.	140.	148.	150.	157.	118.	96.	108.	136.
WEST	72.	88.	116.	133.	142.	139.	143.	136.	125.	88.	65.	60.	109.
NORTHWEST	50.	62.	83.	104.	120.	122.	123.	113.	96.	70.	55.	48.	87.
NORTH	50.	60.	72.	86.	102.	108.	107.	99.	87.	69.	55.	48.	79.
NORTHEAST	50.	62.	83.	104.	120.	122.	123.	113.	96.	70.	55.	48.	87.
EAST	72.	88.	116.	133.	142.	139.	143.	136.	125.	88.	65.	60.	109.
SOUTHEAST	131.	129.	152.	152.	147.	140.	148.	150.	157.	118.	96.	108.	136.
HORIZ.	82.	108.	152.	185.	201.	196.	199.	182.	161.	106.	74.	68.	143.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	58.	63.	74.	78.	83.	85.	89.	89.	87.	67.	53.	51.	73.
SOUTHWEST	52.	57.	69.	78.	86.	88.	91.	89.	82.	63.	47.	47.	71.
WEST	41.	48.	59.	72.	84.	88.	89.	84.	73.	56.	45.	40.	65.
NORTHWEST	37.	42.	50.	62.	75.	81.	82.	76.	65.	52.	43.	38.	59.
NORTH	37.	41.	47.	56.	68.	75.	75.	71.	62.	52.	43.	38.	56.
NORTHEAST	37.	41.	50.	62.	75.	81.	82.	76.	65.	52.	43.	38.	59.
EAST	41.	48.	59.	72.	84.	88.	89.	84.	73.	56.	45.	40.	65.
SOUTHEAST	52.	57.	69.	78.	86.	88.	91.	89.	82.	63.	50.	47.	71.
HORIZ.	43.	52.	69.	89.	107.	111.	111.	99.	83.	60.	47.	41.	76.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	77.	85.	104.	108.	109.	109.	113.	113.	113.	83.	64.	64.	95.
SOUTHWEST	66.	74.	94.	107.	114.	114.	117.	112.	105.	76.	58.	56.	91.
WEST	46.	57.	76.	96.	110.	113.	114.	103.	89.	63.	48.	43.	80.
NORTHWEST	39.	46.	60.	78.	95.	101.	101.	90.	74.	56.	45.	39.	69.
NORTH	39.	45.	54.	67.	83.	91.	90.	82.	69.	55.	45.	39.	63.
NORTHEAST	39.	46.	60.	78.	95.	101.	101.	90.	74.	56.	45.	39.	69.
EAST	46.	57.	76.	96.	110.	113.	113.	103.	89.	63.	48.	43.	80.
SOUTHEAST	66.	74.	94.	107.	114.	114.	117.	112.	105.	76.	58.	56.	91.
HORIZ.	50.	65.	95.	127.	151.	154.	152.	131.	107.	71.	51.	45.	100.

LOCATION	APALACHICOLA, FLORIDA	LATITUDE	29 DEGREES	45 MINUTES
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MONTH	1	H0	1981.	T00	57.	T0T	55.	KT	.577	KD	.177					
ORIENTATION <sup>(1)</sup>																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HOURLY SOLAR RADIATION																
SOUTH	0.	0.	0.	6.	87.	137.	170.	190.	196.	190.	170.	137.	87.	6.	0.	0.
SOUTHWEST	0.	0.	0.	0.	2.	15.	27.	67.	112.	152.	140.	194.	187.	145.	11.	0.
WEST	0.	0.	0.	0.	2.	15.	27.	36.	42.	44.	90.	126.	144.	127.	10.	0.
NORTHWEST	0.	0.	0.	0.	2.	15.	27.	36.	42.	44.	42.	36.	32.	43.	5.	0.
NORTH	0.	0.	0.	0.	2.	15.	27.	36.	42.	44.	42.	36.	27.	15.	2.	0.
NORTHEAST	0.	0.	0.	0.	5.	43.	32.	36.	42.	44.	42.	36.	27.	15.	2.	0.
EAST	0.	0.	0.	10.	127.	144.	126.	90.	44.	42.	36.	27.	15.	2.	0.	0.
SOUTHEAST	0.	0.	0.	11.	145.	187.	194.	180.	152.	112.	67.	27.	15.	2.	0.	0.
HORIZ.	0.	0.	0.	4.	52.	105.	146.	173.	182.	173.	146.	105.	52.	4.	0.	0.
MONTH	2	H0	2471.	T00	59.	T0T	57.	KT	.584	KD	.176					
ORIENTATION <sup>(1)</sup>																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HOURLY SOLAR RADIATION																
SOUTH	0.	0.	0.	30.	85.	125.	156.	174.	181.	174.	156.	125.	85.	30.	0.	0.
SOUTHWEST	0.	0.	0.	7.	21.	34.	56.	102.	143.	173.	190.	188.	161.	77.	0.	0.
WEST	0.	0.	0.	7.	21.	34.	44.	50.	52.	100.	138.	161.	155.	83.	0.	0.
NORTHWEST	0.	0.	0.	7.	21.	34.	44.	50.	52.	50.	44.	59.	71.	45.	0.	0.
NORTH	0.	0.	0.	7.	21.	34.	44.	50.	52.	50.	44.	34.	21.	7.	0.	0.
NORTHEAST	0.	0.	0.	45.	71.	59.	44.	50.	52.	50.	44.	34.	21.	7.	0.	0.
EAST	0.	0.	0.	83.	155.	161.	138.	100.	52.	50.	44.	34.	21.	7.	0.	0.
SOUTHEAST	0.	0.	0.	77.	161.	188.	190.	173.	143.	102.	56.	34.	21.	7.	0.	0.
HORIZ.	0.	0.	0.	21.	80.	134.	177.	204.	213.	204.	177.	134.	80.	21.	0.	0.
MONTH	3	H0	2964.	T00	63.	T0T	61.	KT	.576	KD	.177					
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HOURLY SOLAR RADIATION																
SOUTH	0.	0.	0.	28.	67.	102.	129.	146.	152.	146.	129.	102.	67.	28.	0.	0.
SOUTHWEST	0.	0.	0.	13.	28.	40.	50.	85.	125.	155.	172.	173.	154.	102.	0.	0.
WEST	0.	0.	0.	13.	28.	40.	50.	56.	58.	105.	143.	166.	167.	125.	0.	0.
NORTHWEST	0.	0.	0.	13.	28.	40.	50.	56.	58.	56.	60.	86.	98.	82.	0.	0.
NORTH	0.	0.	0.	13.	28.	40.	50.	56.	58.	56.	50.	40.	28.	13.	0.	0.
NORTHEAST	0.	0.	0.	82.	98.	86.	60.	56.	58.	56.	50.	40.	28.	13.	0.	0.
EAST	0.	0.	0.	125.	167.	166.	143.	105.	58.	56.	50.	40.	28.	13.	0.	0.
SOUTHEAST	0.	0.	0.	102.	154.	173.	172.	155.	125.	85.	50.	40.	28.	13.	0.	0.
HORIZ.	0.	0.	0.	44.	105.	159.	200.	227.	236.	227.	200.	159.	105.	44.	0.	0.
DAILY TOTAL RADIATION																
SOUTH	1375.	159.	242.	9.	135.											
SOUTHWEST	1093.	138.	204.	90.	119.											
WEST	664.	106.	146.	77.	94.											
NORTHWEST	326.	81.	101.	66.	74.											
NORTH	290.	79.	96.	64.	72.											
NORTHEAST	326.	81.	101.	66.	74.											
EAST	664.	106.	146.	77.	94.											
SOUTHEAST	1093.	138.	204.	90.	119.											
HORIZ.	1141.	142.	211.	92.	122.											
DAILY TOTAL RADIATION																
SOUTH	1320.	150.	224.	99.	134.											
SOUTHWEST	1153.	138.	203.	94.	124.											
WEST	845.	117.	165.	84.	106.											
NORTHWEST	476.	92.	118.	72.	85.											
NORTH	363.	84.	104.	69.	78.											
NORTHEAST	476.	92.	118.	72.	85.											
EAST	845.	117.	165.	84.	106.											
SOUTHEAST	1153.	138.	203.	94.	124.											
HORIZ.	1445.	158.	240.	103.	141.											
DAILY TOTAL RADIATION																
SOUTH	1096.	133.	190.	96.	125.											
SOUTHWEST	1096.	133.	190.	96.	125.											
WEST	952.	124.	174.	91.	116.											
NORTHWEST	627.	103.	136.	81.	97.											
NORTH	432.	91.	113.	75.	86.											
NORTHEAST	627.	103.	136.	81.	97.											
EAST	952.	124.	174.	91.	116.											
SOUTHEAST	1096.	133.	190.	96.	125.											
HORIZ.	1706.	172.	261.	116.	160.											

LOCATION APALACHICOLA, FLORIDA LATITUDE 29 DEGREES 45 MINUTES

MONTH	4	HO	3391.	TOT	69.	TOT	67.	KT	.612	KD	.171						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	5.	19.	44.	77.	104.	121.	127.	121.	104.	77.	44.	19.	5.	0.	0.
SOUTHWEST	0.	0.	5.	19.	33.	45.	55.	66.	108.	140.	160.	164.	149.	110.	30.	0.	0.
WEST	0.	0.	5.	19.	33.	45.	55.	61.	63.	113.	155.	181.	186.	156.	48.	0.	0.
NORTHWEST	0.	0.	5.	19.	33.	45.	55.	61.	63.	61.	91.	118.	133.	121.	41.	0.	0.
NORTH	0.	0.	13.	27.	33.	45.	55.	61.	63.	61.	55.	45.	33.	27.	13.	0.	0.
NORTHEAST	0.	0.	41.	121.	133.	118.	91.	61.	63.	61.	55.	45.	33.	19.	5.	0.	0.
EAST	0.	0.	48.	156.	196.	181.	155.	113.	63.	61.	55.	45.	33.	19.	5.	0.	0.
SOUTHEAST	0.	0.	30.	110.	149.	164.	160.	140.	108.	66.	55.	45.	33.	19.	5.	0.	0.
HORIZ.	0.	0.	12.	71.	134.	190.	234.	261.	271.	261.	234.	190.	134.	71.	12.	0.	0.

MONTH	5	HO	3621.	TOD	76.	TOT	74.	KT	.630	KD	.167						
ORIENTATION <sup>(1)</sup>	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	9.	23.	36.	53.	78.	94.	100.	94.	78.	53.	36.	23.	9.	0.	0.
SOUTHWEST	0.	0.	9.	23.	36.	47.	56.	62.	89.	122.	142.	148.	136.	104.	47.	0.	0.
WEST	0.	0.	9.	23.	36.	47.	56.	62.	64.	115.	156.	183.	190.	167.	88.	0.	0.
NORTHWEST	0.	0.	9.	23.	36.	47.	56.	62.	64.	76.	111.	139.	154.	145.	83.	0.	0.
NORTH	0.	0.	34.	51.	49.	47.	56.	62.	64.	62.	56.	47.	49.	51.	34.	0.	0.
NORTHEAST	0.	0.	83.	145.	154.	139.	111.	76.	64.	62.	56.	47.	36.	23.	9.	0.	0.
EAST	0.	0.	88.	167.	190.	183.	156.	115.	64.	62.	56.	47.	36.	23.	9.	0.	0.
SOUTHEAST	0.	0.	47.	104.	136.	148.	142.	122.	89.	62.	56.	47.	36.	23.	9.	0.	0.
HORIZ.	0.	0.	27.	88.	151.	206.	249.	276.	286.	276.	249.	206.	151.	88.	27.	0.	0.

MONTH	6	HO	3695.	TOD	82.	TOT	80.	KT	.594	KD	.175						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	11.	24.	37.	48.	66.	81.	86.	81.	66.	48.	37.	24.	11.	0.	0.
SOUTHWEST	0.	0.	11.	24.	37.	48.	57.	62.	79.	108.	126.	130.	119.	92.	45.	0.	0.
WEST	0.	0.	11.	24.	37.	48.	57.	62.	64.	109.	145.	168.	173.	153.	89.	0.	0.
NORTHWEST	0.	0.	11.	24.	37.	48.	57.	62.	64.	82.	112.	136.	147.	139.	87.	0.	0.
NORTH	0.	0.	40.	57.	57.	53.	57.	62.	64.	62.	57.	53.	57.	57.	40.	0.	0.
NORTHEAST	0.	0.	87.	139.	147.	136.	112.	82.	64.	62.	57.	48.	37.	24.	11.	0.	0.
EAST	0.	0.	89.	153.	173.	168.	145.	109.	64.	62.	57.	48.	37.	24.	11.	0.	0.
SOUTHEAST	0.	0.	45.	92.	119.	130.	126.	108.	79.	62.	57.	48.	37.	24.	11.	0.	0.
HORIZ.	0.	0.	32.	89.	147.	197.	237.	261.	270.	261.	237.	197.	147.	89.	32.	0.	0.



LOCATION	APALACHICOLA, FLORIDA	LATITUDE	29 DEGREES	45 MINUTES																	
MONTH	7	H0	3614.	TOD	83.	TOT	81.	KT	.542	KD	.182										
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGD
SOUTH	0.	0.	9.	23.	36.	51.	72.	86.	90.	86.	72.	51.	36.	23.	9.	0.	0.	643.	122.	151.	103.
SOUTHWEST	0.	0.	9.	23.	36.	47.	56.	61.	82.	107.	122.	124.	112.	85.	38.	0.	0.	901.	137.	179.	136.
WEST	0.	0.	9.	23.	36.	47.	56.	61.	63.	102.	133.	152.	154.	133.	68.	0.	0.	1036.	145.	193.	117.
NORTHWEST	0.	0.	9.	23.	36.	47.	56.	61.	63.	73.	99.	118.	127.	116.	65.	0.	0.	891.	137.	178.	112.
NORTH	0.	0.	28.	45.	46.	47.	56.	61.	63.	61.	56.	47.	46.	45.	28.	0.	0.	628.	121.	150.	119.
NORTHEAST	0.	0.	65.	116.	127.	118.	99.	73.	63.	61.	56.	47.	36.	23.	9.	0.	0.	891.	137.	178.	112.
EAST	0.	0.	68.	133.	154.	152.	133.	102.	63.	61.	56.	47.	36.	23.	9.	0.	0.	1036.	145.	193.	117.
SOUTHEAST	0.	0.	38.	85.	112.	124.	122.	107.	82.	61.	56.	47.	36.	23.	9.	0.	0.	901.	137.	179.	112.
HORIZ.	0.	0.	24.	77.	130.	177.	213.	236.	244.	236.	213.	177.	130.	77.	24.	0.	0.	1960.	201.	291.	148.

MONTH	8	H0	3365.	TOD	83.	TOT	81.	KT	558	KD	.180										
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	5.	19.	42.	72.	95.	111.	116.	111.	95.	72.	42.	19.	5.	0.	0.	804.	134.	173.	109.
SOUTHWEST	0.	0.	5.	19.	33.	45.	54.	64.	100.	128.	144.	145.	130.	94.	23.	0.	0.	982.	145.	193.	115.
WEST	0.	0.	5.	19.	33.	45.	54.	60.	62.	105.	139.	160.	161.	131.	36.	0.	0.	1009.	147.	196.	116.
NORTHWEST	0.	0.	5.	19.	33.	45.	54.	60.	62.	60.	85.	107.	117.	103.	31.	0.	0.	779.	133.	170.	108.
NORTH	0.	0.	11.	26.	33.	45.	54.	60.	62.	60.	54.	45.	33.	26.	11.	0.	0.	516.	116.	141.	99.
NORTHEAST	0.	0.	31.	103.	117.	107.	85.	60.	62.	60.	54.	45.	33.	19.	5.	0.	0.	779.	133.	170.	108.
EAST	0.	0.	36.	131.	161.	160.	139.	105.	62.	60.	54.	45.	33.	19.	5.	0.	0.	1009.	147.	196.	116.
SOUTHEAST	0.	0.	23.	94.	130.	145.	144.	128.	100.	64.	54.	45.	33.	19.	5.	0.	0.	982.	145.	193.	115.
HORIZ.	0.	0.	11.	64.	121.	172.	212.	237.	245.	237.	212.	172.	121.	64.	11.	0.	0.	1878.	202.	294.	146.

MONTH	9	H0	2944.	TOD	81.	TOT	79.	KT	559	KD	.180										
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	26.	63.	97.	123.	140.	146.	140.	123.	97.	63.	26.	0.	0.	0.	1045.	152.	206.	115.
SOUTHWEST	0.	0.	0.	13.	27.	40.	49.	82.	120.	148.	164.	164.	144.	93.	0.	0.	0.	1045.	152.	206.	115.
WEST	0.	0.	0.	13.	27.	40.	49.	55.	57.	102.	138.	154.	156.	113.	0.	0.	0.	910.	143.	190.	110.
NORTHWEST	0.	0.	0.	13.	27.	40.	49.	55.	57.	55.	59.	83.	94.	75.	0.	0.	0.	609.	122.	154.	100.
NORTH	0.	0.	0.	13.	27.	40.	49.	55.	57.	55.	49.	40.	27.	13.	0.	0.	0.	428.	110.	132.	94.
NORTHEAST	0.	0.	0.	75.	94.	83.	59.	55.	57.	55.	49.	40.	27.	13.	0.	0.	0.	609.	122.	154.	100.
EAST	0.	0.	0.	113.	156.	158.	138.	102.	57.	55.	49.	40.	27.	13.	0.	0.	0.	910.	143.	190.	110.
SOUTHEAST	0.	0.	0.	93.	144.	164.	144.	120.	82.	49.	40.	27.	13.	0.	0.	0.	0.	1045.	152.	206.	115.
HORIZ.	0.	0.	0.	42.	100.	153.	193.	219.	228.	219.	193.	153.	100.	42.	0.	0.	0.	1644.	193.	279.	135.

LOCATION APALACHICOLA, FLORIDA LATITUDE 29 DEGREES 45 MINUTES

MONTH 10 HO 2437. TOD 73. TOT 71. KT .608 KD .172

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SAT6S	SAT6D	SAT6S	SAT6D
SOUTH	0.	0.	0.	29.	87.	131.	163.	183.	190.	183.	163.	131.	87.	29.	0.	0.	0.	137A.	168.	246.	115.	151.
SOUTHWEST	0.	0.	0.	7.	21.	33.	57.	106.	150.	182.	200.	197.	166.	73.	0.	0.	0.	1191.	155.	222.	109.	140.
WEST	0.	0.	0.	7.	21.	33.	43.	49.	51.	103.	144.	167.	160.	78.	0.	0.	0.	858.	132.	181.	99.	121.
NORTHWEST	0.	0.	0.	7.	21.	33.	43.	49.	51.	49.	43.	59.	72.	42.	0.	0.	0.	471.	106.	132.	86.	98.
NORTH	0.	0.	0.	7.	21.	33.	43.	49.	51.	49.	43.	33.	21.	7.	0.	0.	0.	359.	98.	118.	83.	92.
NORTHEAST	0.	0.	0.	42.	72.	59.	43.	49.	51.	49.	43.	33.	21.	7.	0.	0.	0.	471.	106.	132.	86.	98.
EAST	0.	0.	0.	78.	160.	167.	144.	103.	51.	49.	43.	33.	21.	7.	0.	0.	0.	858.	132.	181.	99.	121.
SOUTHEAST	0.	0.	0.	73.	166.	197.	200.	182.	150.	106.	57.	33.	21.	7.	0.	0.	0.	1191.	155.	222.	109.	140.
HORIZ.	0.	0.	0.	20.	90.	138.	183.	211.	221.	211.	193.	138.	80.	20.	0.	0.	0.	1483.	175.	259.	110.	157.

MONTH 11 HO 1968. TOD 64. TOT 61. KT .574 KD .178

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	5.	85.	135.	168.	188.	195.	188.	168.	135.	85.	5.	0.	0.	0.	1359.	164.	246.	105.	141.
SOUTHWEST	0.	0.	0.	2.	15.	27.	67.	112.	151.	179.	192.	185.	142.	9.	0.	0.	0.	1079.	144.	209.	96.	124.
WEST	0.	0.	0.	2.	15.	27.	36.	42.	44.	90.	125.	142.	123.	8.	0.	0.	0.	654.	112.	152.	82.	99.
NORTHWEST	0.	0.	0.	2.	15.	27.	36.	42.	44.	42.	36.	31.	42.	4.	0.	0.	0.	321.	87.	107.	72.	80.
NORTH	0.	0.	0.	2.	15.	27.	36.	42.	44.	42.	36.	27.	15.	2.	0.	0.	0.	288.	85.	102.	71.	78.
NORTHEAST	0.	0.	0.	4.	42.	31.	36.	42.	44.	42.	36.	27.	15.	2.	0.	0.	0.	321.	87.	107.	72.	80.
EAST	0.	0.	0.	8.	123.	142.	125.	90.	44.	42.	36.	27.	15.	2.	0.	0.	0.	654.	112.	152.	82.	99.
SOUTHEAST	0.	0.	0.	9.	142.	185.	192.	179.	151.	112.	67.	27.	15.	2.	0.	0.	0.	1079.	144.	209.	96.	124.
HORIZ.	0.	0.	0.	4.	51.	103.	145.	171.	180.	171.	145.	103.	51.	4.	0.	0.	0.	1128.	147.	215.	98.	127.

MONTH 12 HO 1782. TOD 59. TOT 56. KT .543 KD .182

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS
SOUTH	0.	0.	0.	0.	77.	128.	161.	180.	186.	180.	161.	128.	77.	0.	0.	0.	0.	156.	236.	97.	131.
SOUTHWEST	0.	0.	0.	0.	12.	26.	67.	108.	144.	169.	179.	169.	122.	0.	0.	0.	0.	135.	197.	A.	114.
WEST	0.	0.	0.	0.	12.	24.	33.	39.	41.	81.	112.	125.	102.	0.	0.	0.	0.	102.	138.	75.	90.
NORTHWEST	0.	0.	0.	0.	12.	24.	33.	39.	41.	39.	33.	24.	30.	0.	0.	0.	0.	80.	97.	65.	72.
NORTH	0.	0.	0.	0.	12.	24.	33.	39.	41.	39.	33.	24.	12.	0.	0.	0.	0.	78.	94.	65.	71.
NORTHEAST	0.	0.	0.	0.	30.	24.	33.	39.	41.	39.	33.	24.	12.	0.	0.	0.	0.	80.	97.	65.	72.
EAST	0.	0.	0.	0.	102.	125.	112.	81.	41.	39.	33.	24.	12.	0.	0.	0.	0.	102.	138.	75.	90.
SOUTHEAST	0.	0.	0.	0.	122.	169.	179.	169.	144.	108.	67.	26.	12.	0.	0.	0.	0.	998.	135.	197.	88.
HORIZ.	0.	0.	0.	1.	39.	87.	126.	150.	159.	150.	126.	87.	39.	1.	0.	0.	0.	132.	192.	87.	113.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	159.	150.	133.	121.	113.	118.	122.	134.	152.	168.	164.	156.	141.
SOUTHWEST	138.	138.	133.	134.	138.	137.	137.	145.	152.	155.	144.	135.	141.
WEST	106.	117.	124.	136.	148.	149.	145.	147.	143.	132.	112.	102.	130.
NORTHWEST	81.	92.	103.	120.	137.	141.	137.	133.	122.	106.	87.	80.	112.
NORTH	79.	84.	91.	101.	116.	124.	121.	116.	110.	98.	85.	78.	100.
NORTHEAST	81.	92.	103.	120.	137.	141.	137.	133.	122.	106.	87.	80.	112.
EAST	106.	117.	124.	136.	148.	149.	145.	147.	143.	132.	112.	102.	130.
SOUTHEAST	138.	138.	133.	134.	138.	137.	137.	145.	152.	155.	144.	135.	141.
HORIZ.	142.	158.	172.	193.	214.	211.	201.	202.	193.	175.	147.	132.	178.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	242.	224.	190.	163.	149.	146.	151.	173.	206.	246.	246.	236.	198.
SOUTHWEST	204.	203.	190.	187.	185.	179.	179.	193.	206.	222.	209.	197.	196.
WEST	146.	165.	174.	191.	204.	201.	193.	196.	190.	181.	152.	138.	177.
NORTHWEST	101.	118.	136.	161.	187.	187.	178.	170.	154.	132.	107.	97.	144.
NORTH	96.	104.	113.	127.	147.	156.	150.	141.	132.	118.	102.	94.	123.
NORTHEAST	101.	118.	136.	161.	183.	187.	178.	170.	154.	132.	107.	97.	144.
EAST	146.	165.	174.	191.	204.	201.	193.	196.	190.	181.	152.	138.	177.
SOUTHEAST	204.	203.	190.	187.	185.	179.	179.	193.	206.	222.	209.	197.	196.
HORIZ.	211.	240.	261.	294.	319.	310.	291.	294.	279.	259.	215.	192.	264.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	99.	99.	96.	95.	98.	101.	103.	109.	115.	115.	105.	97.	103.
SOUTHWEST	90.	94.	96.	102.	109.	112.	112.	115.	115.	109.	96.	84.	103.
WEST	77.	84.	91.	103.	109.	119.	117.	116.	110.	95.	82.	75.	99.
NORTHWEST	66.	72.	81.	95.	109.	114.	112.	108.	100.	86.	72.	65.	90.
NORTH	64.	69.	75.	84.	97.	104.	103.	99.	94.	83.	71.	65.	84.
NORTHEAST	66.	72.	81.	95.	109.	114.	112.	108.	100.	86.	72.	65.	90.
EAST	77.	84.	91.	103.	115.	119.	117.	116.	110.	99.	82.	75.	99.
SOUTHEAST	90.	94.	96.	102.	109.	112.	112.	115.	115.	109.	96.	88.	103.
HORIZ.	92.	103.	116.	134.	152.	155.	148.	146.	135.	119.	98.	87.	124.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	135.	134.	125.	118.	116.	117.	120.	130.	142.	151.	141.	131.	130.
SOUTHWEST	119.	124.	125.	131.	136.	137.	136.	141.	142.	140.	124.	114.	131.
WEST	94.	106.	116.	133.	147.	149.	144.	142.	134.	121.	99.	90.	123.
NORTHWEST	74.	85.	97.	117.	135.	141.	135.	128.	116.	98.	80.	72.	107.
NORTH	72.	78.	86.	98.	114.	123.	119.	112.	105.	92.	78.	71.	96.
NORTHEAST	74.	85.	97.	117.	135.	141.	135.	128.	116.	98.	80.	72.	107.
EAST	94.	106.	116.	133.	147.	149.	144.	142.	134.	121.	99.	90.	123.
SOUTHEAST	119.	124.	125.	131.	136.	137.	136.	141.	142.	140.	124.	114.	131.
HORIZ.	122.	141.	160.	188.	212.	212.	200.	195.	178.	157.	127.	113.	167.

[illegible]



LOCATION ASTORIA, OREGON LATITUDE 46 DEGREES 11 MINUTES

MONTH	4	HO	3095.	TOD	51.	TOT	50.	KT	.471	KD	.187						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	8.	23.	54.	84.	108.	123.	129.	123.	108.	84.	54.	23.	8.	0.	0.
SOUTHWEST	0.	0.	8.	19.	30.	39.	46.	78.	106.	126.	136.	133.	117.	87.	38.	0.	0.
WEST	0.	0.	8.	19.	30.	39.	46.	50.	52.	85.	111.	127.	129.	111.	58.	0.	0.
NORTHWEST	0.	0.	8.	19.	30.	39.	46.	50.	52.	50.	48.	69.	83.	82.	48.	0.	0.
NORTH	0.	0.	15.	19.	30.	39.	46.	50.	52.	50.	46.	39.	30.	19.	15.	0.	0.
NORTHEAST	0.	0.	48.	82.	83.	69.	48.	50.	52.	50.	46.	39.	30.	19.	8.	0.	0.
EAST	0.	0.	58.	111.	129.	127.	111.	85.	52.	50.	46.	39.	30.	19.	8.	0.	0.
SOUTHEAST	0.	0.	38.	87.	117.	133.	136.	126.	106.	78.	46.	39.	30.	19.	8.	0.	0.
HORIZ.	0.	0.	20.	58.	97.	131.	158.	175.	180.	175.	158.	131.	97.	58.	20.	0.	0.

MONTH	5	HO	3581.	TOD	55.	TOT	53.	KT	.524	KD	.185						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	4.	14.	25.	50.	81.	106.	122.	128.	122.	106.	81.	50.	25.	14.	4.	0.
SOUTHWEST	0.	4.	14.	25.	36.	45.	51.	75.	107.	130.	142.	142.	127.	100.	59.	10.	0.
WEST	0.	4.	14.	25.	36.	45.	51.	56.	57.	95.	125.	145.	151.	139.	100.	20.	0.
NORTHWEST	0.	4.	14.	25.	36.	45.	51.	56.	57.	56.	65.	90.	107.	111.	90.	21.	0.
NORTH	0.	12.	36.	33.	36.	45.	51.	56.	57.	56.	51.	45.	36.	33.	36.	12.	0.
NORTHEAST	0.	21.	90.	111.	107.	90.	65.	56.	57.	56.	51.	45.	36.	25.	14.	4.	0.
EAST	0.	20.	100.	139.	151.	145.	125.	95.	57.	56.	51.	45.	36.	25.	14.	4.	0.
SOUTHEAST	0.	10.	59.	100.	127.	142.	142.	130.	107.	75.	51.	45.	36.	25.	14.	4.	0.
HORIZ.	0.	8.	43.	86.	127.	164.	192.	210.	216.	210.	192.	164.	127.	86.	43.	8.	0.
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MONTH	6	HO	3763.	TOD	59.	TOT	58.	KT	.466	KD	.186						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	6.	16.	26.	43.	69.	89.	103.	108.	103.	89.	69.	43.	26.	16.	6.	0.
SOUTHWEST	0.	6.	16.	26.	36.	44.	51.	67.	93.	111.	120.	119.	107.	84.	53.	16.	0.
WEST	0.	6.	16.	26.	36.	44.	51.	55.	56.	86.	110.	126.	130.	119.	90.	34.	0.
NORTHWEST	0.	6.	16.	26.	36.	44.	51.	55.	56.	55.	66.	85.	98.	100.	84.	36.	0.
NORTH	0.	20.	38.	37.	36.	44.	51.	55.	56.	55.	51.	44.	36.	37.	38.	20.	0.
NORTHEAST	0.	36.	84.	100.	98.	85.	66.	55.	56.	55.	51.	44.	36.	26.	16.	6.	0.
EAST	0.	34.	90.	119.	130.	126.	110.	86.	56.	55.	51.	44.	36.	26.	16.	6.	0.
SOUTHEAST	0.	16.	53.	84.	107.	119.	120.	111.	93.	67.	51.	44.	36.	26.	16.	6.	0.
HORIZ.	0.	14.	46.	83.	119.	151.	175.	190.	196.	190.	175.	151.	119.	83.	46.	14.	0.
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LOCATION	ASTORIA, OREGON										LATITUDE 46 DEGREES 11 MINUTES											
MONTH	7	H0	3581.	T0D	63.	TOT	61.	KT	.551	KD	.181											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
	HOURLY SOLAR RADIATION																SATGS		SATGD	SATGS	SATGD	
SOUTH	0.	4.	14.	25.	51.	84.	111.	128.	134.	128.	111.	84.	51.	25.	14.	4.	0.	969.	115.	156.	94.	119.
SOUTHWEST	0.	4.	14.	25.	36.	45.	52.	77.	112.	137.	150.	150.	135.	105.	62.	11.	0.	1116.	123.	170.	99.	128.
WEST	0.	4.	14.	25.	36.	45.	52.	56.	58.	99.	132.	154.	161.	148.	105.	21.	0.	1111.	123.	170.	99.	128.
NORTHWEST	0.	4.	14.	25.	36.	45.	52.	56.	58.	56.	67.	95.	114.	118.	95.	22.	0.	857.	109.	145.	90.	113.
NORTH	0.	12.	38.	34.	36.	45.	52.	56.	58.	56.	52.	45.	36.	34.	38.	12.	0.	603.	95.	121.	81.	97.
NORTHEAST	0.	22.	95.	118.	114.	95.	67.	56.	58.	56.	52.	45.	36.	25.	14.	4.	0.	857.	109.	145.	90.	113.
EAST	0.	21.	105.	148.	161.	154.	132.	99.	58.	56.	52.	45.	36.	25.	14.	4.	0.	1111.	123.	170.	99.	128.
SOUTHEAST	0.	11.	62.	105.	135.	150.	137.	112.	77.	52.	45.	36.	25.	14.	4.	0.	0.	1116.	123.	170.	99.	128.
HORIZ.	0.	8.	44.	89.	134.	173.	203.	222.	228.	222.	203.	173.	134.	89.	44.	8.	0.	1973.	170.	253.	128.	180.
MONTH	8	H0	3075.	T0D	64.	TOT	62.	KT	.538	KD	.183											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
	HOURLY SOLAR RADIATION																SATGS		SATGD	SATGS	SATGD	
SOUTH	0.	0.	8.	24.	60.	96.	125.	143.	149.	143.	125.	96.	60.	24.	8.	0.	0.	1060.	127.	176.	98.	126.
SOUTHWEST	0.	0.	8.	19.	30.	40.	47.	86.	121.	147.	159.	157.	138.	101.	42.	0.	0.	1095.	129.	179.	99.	128.
WEST	0.	0.	8.	19.	30.	40.	47.	52.	53.	95.	128.	149.	153.	130.	64.	0.	0.	969.	122.	166.	95.	120.
NORTHWEST	0.	0.	8.	19.	30.	40.	47.	52.	53.	52.	50.	78.	95.	95.	54.	0.	0.	672.	104.	135.	85.	102.
NORTH	0.	16.	19.	30.	40.	47.	52.	52.	53.	52.	47.	40.	30.	19.	16.	0.	0.	463.	91.	113.	78.	90.
NORTHEAST	0.	0.	54.	95.	95.	78.	50.	52.	53.	52.	47.	40.	30.	19.	8.	0.	0.	672.	104.	135.	85.	102.
EAST	0.	64.	130.	153.	149.	128.	95.	53.	53.	52.	47.	40.	30.	19.	8.	0.	0.	969.	122.	166.	95.	120.
SOUTHEAST	0.	0.	42.	101.	138.	157.	159.	147.	121.	86.	47.	40.	30.	19.	8.	0.	0.	1095.	129.	179.	99.	128.
HORIZ.	0.	0.	21.	64.	109.	149.	180.	200.	207.	200.	180.	149.	109.	64.	21.	0.	0.	1654.	163.	239.	118.	162.
MONTH	9	H0	2366.	T0D	62.	TOT	60.	KT	.526	KD	.184											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
	HOURLY SOLAR RADIATION																SATGS		SATGD	SATGS	SATGD	
SOUTH	0.	0.	0.	26.	68.	107.	139.	158.	165.	158.	139.	107.	68.	26.	0.	0.	0.	1161.	141.	202.	100.	130.
SOUTHWEST	0.	0.	0.	11.	22.	32.	32.	39.	46.	130.	155.	166.	161.	134.	78.	0.	0.	1036.	133.	187.	96.	123.
WEST	0.	0.	0.	11.	22.	32.	39.	44.	46.	87.	120.	138.	135.	91.	0.	0.	0.	765.	114.	154.	86.	106.
NORTHWEST	0.	0.	0.	11.	22.	32.	39.	44.	46.	44.	39.	53.	69.	57.	0.	0.	0.	457.	93.	117.	76.	88.
NORTH	0.	0.	0.	11.	22.	32.	39.	44.	46.	44.	39.	32.	22.	11.	0.	0.	0.	341.	85.	103.	72.	81.
NORTHEAST	0.	0.	0.	57.	69.	53.	39.	44.	46.	44.	39.	32.	22.	11.	0.	0.	0.	457.	93.	117.	76.	88.
EAST	0.	0.	0.	91.	135.	138.	120.	87.	46.	44.	39.	32.	22.	11.	0.	0.	0.	765.	114.	154.	86.	106.
SOUTHEAST	0.	0.	0.	78.	134.	161.	166.	155.	130.	95.	53.	32.	22.	11.	0.	0.	0.	1036.	133.	187.	96.	123.
HORIZ.	0.	0.	1.	31.	75.	115.	147.	167.	174.	167.	147.	115.	75.	31.	1.	0.	0.	1243.	147.	211.	103.	135.

LOCATION		ASTORIA•OREGON		LATITUDE 46 DEGREES 11 MINUTES		MONTH 10		HO 1647.		TOD 56.		TOT 54.		KT .435		KD .185		DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SAT6D		SAG/ALL DAY SAT6D	
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
		HOURLY SOLAR RADIATION																					
		-----																					
SOUTH		0.	0.	0.	3.	49.	88.	116.	134.	140.	134.	116.	88.	49.	3.	0.	0.	0.	920.	123.	178.	84.	108.
SOUTHWEST		0.	0.	0.	2.	12.	21.	49.	82.	109.	126.	132.	121.	85.	5.	0.	0.	0.	742.	110.	155.	78.	97.
WEST		0.	0.	0.	2.	12.	21.	28.	32.	34.	64.	86.	95.	78.	5.	0.	0.	0.	457.	89.	117.	69.	81.
NORTHWEST		0.	0.	0.	2.	12.	21.	28.	32.	34.	32.	28.	26.	32.	4.	0.	0.	0.	250.	74.	89.	62.	69.
NORTH		0.	0.	0.	2.	12.	21.	28.	32.	34.	32.	28.	21.	12.	2.	0.	0.	0.	224.	72.	86.	61.	67.
NORTHEAST		0.	0.	0.	4.	32.	26.	28.	32.	34.	32.	28.	21.	12.	2.	0.	0.	0.	250.	74.	89.	62.	69.
EAST		0.	0.	0.	5.	78.	95.	86.	64.	34.	32.	28.	21.	12.	2.	0.	0.	0.	457.	89.	117.	69.	81.
SOUTHEAST		0.	0.	0.	5.	85.	121.	132.	126.	109.	82.	49.	21.	12.	2.	0.	0.	0.	742.	110.	155.	78.	97.
HORIZ.		0.	0.	0.	4.	33.	65.	91.	108.	114.	108.	91.	65.	33.	4.	0.	0.	0.	716.	108.	151.	77.	96.

MONTH 11		HO 1077.		TOD 48.		TOT 47.		KT .336		KD .180		DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS							
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
		-----																					
SOUTH		0.	0.	0.	0.	14.	53.	78.	92.	97.	92.	78.	53.	14.	0.	0.	0.	0.	574.	97.	137.	66.	81.
SOUTHWEST		0.	0.	0.	0.	4.	14.	36.	58.	75.	85.	85.	69.	21.	0.	0.	0.	0.	448.	87.	118.	61.	73.
WEST		0.	0.	0.	0.	4.	12.	18.	22.	23.	41.	52.	50.	18.	0.	0.	0.	0.	241.	69.	86.	55.	61.
NORTHWEST		0.	0.	0.	0.	4.	12.	18.	22.	23.	22.	18.	12.	7.	0.	0.	0.	0.	137.	60.	70.	51.	55.
NORTH		0.	0.	0.	0.	4.	12.	18.	22.	23.	22.	18.	12.	4.	0.	0.	0.	0.	134.	60.	69.	51.	55.
NORTHEAST		0.	0.	0.	0.	7.	12.	18.	22.	23.	22.	18.	12.	4.	0.	0.	0.	0.	137.	60.	70.	51.	55.
EAST		0.	0.	0.	0.	18.	50.	52.	41.	23.	22.	18.	12.	4.	0.	0.	0.	0.	241.	69.	86.	55.	61.
SOUTHEAST		0.	0.	0.	0.	21.	69.	85.	85.	75.	58.	36.	14.	4.	0.	0.	0.	0.	448.	87.	118.	61.	73.
HORIZ.		0.	0.	0.	0.	8.	30.	49.	62.	66.	62.	49.	30.	8.	0.	0.	0.	0.	363.	79.	105.	59.	68.

MONTH 12		HO 872.		TOD 44.		TOT 43.		KT .332		KD .180		DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS							
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
		HOURLY SOLAR RADIATION																					
SOUTH		0.	0.	0.	0.	2.	46.	74.	90.	95.	90.	74.	46.	2.	0.	0.	0.	0.	521.	92.	130.	59.	73.
SOUTHWEST		0.	0.	0.	0.	1.	12.	34.	56.	73.	82.	80.	58.	3.	0.	0.	0.	0.	400.	81.	110.	56.	66.
WEST		0.	0.	0.	0.	1.	9.	15.	19.	20.	37.	47.	41.	2.	0.	0.	0.	0.	192.	61.	76.	49.	54.
NORTHWEST		0.	0.	0.	0.	1.	9.	15.	19.	20.	19.	15.	9.	2.	0.	0.	0.	0.	108.	54.	62.	46.	49.
NORTH		0.	0.	0.	0.	1.	9.	15.	19.	20.	19.	15.	9.	1.	0.	0.	0.	0.	108.	54.	62.	46.	49.
NORTHEAST		0.	0.	0.	0.	2.	9.	15.	19.	20.	19.	15.	9.	1.	0.	0.	0.	0.	108.	54.	62.	46.	49.
EAST		0.	0.	0.	0.	2.	41.	47.	37.	20.	19.	15.	9.	1.	0.	0.	0.	0.	192.	61.	76.	49.	54.
SOUTHEAST		0.	0.	0.	0.	3.	58.	80.	82.	73.	56.	34.	12.	1.	0.	0.	0.	0.	400.	81.	110.	56.	66.
HORIZ.		0.	0.	0.	0.	3.	21.	40.	52.	57.	52.	40.	21.	3.	0.	0.	0.	0.	289.	70.	92.	52.	60.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

# ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	73.	91.	102.	104.	110.	107.	119.	126.	130.	108.	81.	73.	102.
SOUTHWEST	66.	82.	97.	106.	118.	115.	128.	128.	123.	97.	73.	66.	100.
WEST	54.	68.	84.	100.	118.	117.	128.	120.	106.	81.	61.	54.	91.
NORTHWEST	48.	57.	70.	86.	104.	107.	113.	102.	88.	69.	55.	49.	79.
NORTH	48.	56.	64.	76.	89.	95.	97.	90.	81.	67.	55.	49.	72.
NORTHEAST	48.	57.	70.	86.	104.	107.	113.	102.	88.	69.	55.	49.	79.
EAST	54.	68.	84.	100.	118.	117.	128.	120.	106.	81.	61.	54.	91.
SOUTHEAST	66.	82.	97.	106.	118.	115.	128.	128.	123.	97.	73.	66.	100.
HRIZ.	61.	82.	108.	135.	167.	164.	180.	162.	135.	96.	68.	60.	118.



LOCATION ATLANTA, GEORGIA LATITUDE 33 DEGREES 38 MINUTES

MONTH	1	HO	1775.	TOD	47.	TOT	45.	KT	.493	KD	.183	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	1.	65.	110.	139.	157.	163.	157.	139.	110.	65.	1.	0.	0.	0.
SOUTHWEST	0.	0.	0.	1.	12.	24.	59.	96.	127.	148.	156.	146.	105.	1.	0.	0.	0.
WEST	0.	0.	0.	1.	12.	24.	32.	38.	40.	75.	101.	111.	91.	1.	0.	0.	0.
NORTHWEST	0.	0.	0.	1.	12.	24.	32.	38.	40.	38.	32.	25.	31.	1.	0.	0.	0.
NORTH	0.	0.	0.	1.	12.	24.	32.	38.	40.	38.	32.	24.	12.	1.	0.	0.	0.
NORTHEAST	0.	0.	0.	1.	31.	25.	32.	38.	40.	38.	32.	24.	12.	1.	0.	0.	0.
EAST	0.	0.	0.	1.	91.	111.	101.	75.	40.	38.	32.	24.	12.	1.	0.	0.	0.
SOUTHEAST	0.	0.	0.	1.	105.	146.	156.	148.	127.	96.	59.	24.	12.	1.	0.	0.	0.
HORIZ.	0.	0.	0.	1.	37.	79.	113.	135.	142.	135.	113.	79.	37.	1.	0.	0.	0.

MONTH	2	HO	2298.	TOD	50.	TOT	47.	KT,	496	KD	.188						
ORIENTATION																	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	21.	68.	104.	131.	147.	153.	147.	131.	104.	68.	21.	0.	0.	0.
SOUTHWEST	0.	0.	0.	6.	19.	31.	53.	90.	122.	145.	155.	150.	124.	51.	0.	0.	0.
WEST	0.	0.	0.	6.	19.	31.	40.	45.	47.	84.	112.	126.	118.	54.	0.	0.	0.
NORTHWEST	0.	0.	0.	6.	19.	31.	40.	45.	47.	45.	40.	46.	54.	30.	0.	0.	0.
NORTH	0.	0.	0.	6.	19.	31.	40.	45.	47.	45.	40.	31.	19.	6.	0.	0.	0.
NORTHEAST	0.	0.	0.	30.	54.	46.	40.	45.	47.	45.	40.	31.	19.	6.	0.	0.	0.
EAST	0.	0.	0.	54.	118.	126.	112.	84.	47.	45.	40.	31.	19.	6.	0.	0.	0.
SOUTHEAST	0.	0.	0.	51.	124.	150.	155.	145.	122.	90.	53.	31.	19.	6.	0.	0.	0.
HORIZ.	0.	0.	0.	15.	62.	106.	140.	162.	170.	162.	140.	106.	62.	15.	0.	0.	0.
DAILY TOTAL RADIATION												1097.	126.	188.	82.	111.	
SAG/DAYTIME SATGS												947.	116.	169.	77.	102.	
SAG/ALL DAY SATGS												683.	97.	136.	69.	87.	
SAG/DAYTIME SATGS												405.	78.	101.	60.	70.	
SAG/ALL DAY SATGS												331.	73.	91.	57.	66.	
SAG/DAYTIME SATGS												405.	78.	101.	60.	70.	
SAG/ALL DAY SATGS												683.	97.	136.	69.	87.	
SAG/DAYTIME SATGS												947.	116.	169.	77.	102.	
SAG/ALL DAY SATGS												1141.	129.	194.	83.	113.	

MONTH	3	HO	2845.	TOD	56.	TOT	53.	KT	.522	KD	.185	HOURLY SOLAR RADIATION		DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD	
SOUTH	0.	0.	0.	26.	63.	96.	122.	139.	144.	139.	122.	96.	63.	26.	0.	0.	0.	1038.	122.	177.	86.	113.
SOUTHWEST	0.	0.	0.	13.	26.	38.	47.	84.	118.	143.	156.	155.	135.	88.	0.	0.	0.	1004.	120.	173.	85.	111.
WEST	0.	0.	0.	13.	26.	38.	47.	53.	55.	95.	126.	145.	143.	106.	0.	0.	0.	847.	110.	154.	80.	102.
NORTHWEST	0.	0.	0.	13.	26.	38.	47.	53.	55.	53.	50.	72.	83.	69.	0.	0.	0.	560.	92.	121.	71.	85.
NORTH	0.	0.	0.	13.	26.	38.	47.	53.	55.	53.	47.	38.	26.	13.	0.	0.	0.	410.	82.	104.	66.	77.
NORTHEAST	0.	0.	0.	69.	83.	72.	50.	53.	55.	53.	47.	38.	26.	13.	0.	0.	0.	560.	82.	121.	71.	85.
EAST	0.	0.	0.	106.	143.	145.	126.	95.	55.	53.	47.	38.	26.	13.	0.	0.	0.	847.	110.	154.	80.	102.
SOUTHEAST	0.	0.	0.	88.	135.	155.	156.	143.	118.	84.	47.	38.	26.	13.	0.	0.	0.	1004.	120.	173.	85.	111.
HORIZ.	0.	0.	0.	39.	91.	138.	174.	197.	205.	197.	174.	138.	91.	39.	0.	0.	0.	1483.	151.	228.	100.	139.

LOCATION ATLANTA, GEORGIA LATITUDE 33 DEGREES 38 MINUTES

MONTH	4	HO	3344.	TOD	65.	TOT	62.	KT	.551	KD	.181											
ORIENTATION	4	5	6	7	8	9	HOURLY SOLAR RADIATION							DAILY TOTAL RADIATION	SAG/DAY		TMF		SAG/ALL DAY			
							10	11	12	13	14	15	16		17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	6.	19.	48.	79.	104.	120.	126.	120.	104.	79.	48.	19.	6.	0.	0.	877.	117.	159.	90.	113.
SOUTHWEST	0.	0.	6.	19.	33.	44.	53.	71.	106.	133.	148.	149.	134.	99.	31.	0.	0.	1027.	125.	175.	95.	122.
WEST	0.	0.	6.	19.	33.	44.	53.	58.	60.	103.	137.	158.	161.	136.	49.	0.	0.	1018.	125.	174.	94.	121.
NORTHWEST	0.	0.	6.	19.	33.	44.	53.	58.	60.	58.	76.	100.	113.	104.	42.	0.	0.	768.	110.	147.	86.	106.
NORTH	0.	0.	14.	23.	33.	44.	53.	58.	60.	58.	53.	44.	33.	23.	14.	0.	0.	510.	95.	120.	78.	91.
NORTHEAST	0.	0.	42.	104.	113.	100.	76.	58.	60.	58.	53.	44.	33.	19.	6.	0.	0.	768.	110.	147.	86.	106.
EAST	0.	0.	49.	136.	161.	158.	137.	103.	60.	58.	53.	44.	33.	19.	6.	0.	0.	1018.	125.	174.	94.	121.
SOUTHEAST	0.	0.	31.	99.	134.	149.	148.	133.	106.	71.	53.	44.	33.	19.	6.	0.	0.	1027.	125.	175.	95.	122.
HORIZ.	0.	0.	14.	66.	120.	168.	206.	229.	237.	229.	206.	168.	120.	66.	14.	0.	0.	1843.	173.	262.	121.	169.

DAILY TOTAL	RADIATION	SAG/DAYTIME	SATGS	SATGD	SAG/ALL DAY	SATGS	SATGD
877.	117.	159.	90.	113.	125.	175.	95.
1027.	125.	175.	95.	122.	125.	174.	94.
1018.	125.	174.	94.	121.	110.	147.	86.
768.	95.	120.	78.	91.	110.	147.	86.
510.	110.	147.	86.	106.	125.	174.	94.
768.	125.	174.	94.	121.	125.	175.	95.
1018.	173.	262.	121.	169.			

MONTH	5	HO	3633.	TOD	73.	TOT	70.	HOURLY SOLAR RADIATION								KT				.561				KD	.179				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20												
SOUTH	0	0	10	23	36	60	84	99	104	99	84	60	36	23	10	0	0	731	116	149	95	114							
SOUTHWEST	0	0	10	23	36	47	55	61	92	118	134	136	123	95	47	0	0	978	131	175	103	129							
WEST	0	0	10	23	36	47	55	61	63	104	138	159	164	145	85	0	0	1089	138	187	107	136							
NORTHWEST	0	0	10	23	36	47	55	61	63	64	93	117	129	124	79	0	0	902	126	167	101	125							
NORTH	0	0	33	44	40	47	55	61	63	61	55	47	40	44	33	0	0	624	110	138	91	108							
NORTHEAST	0	0	79	124	129	117	93	64	63	61	55	47	36	23	10	0	0	902	126	167	101	125							
EAST	0	0	85	145	164	159	138	104	63	61	55	47	36	23	10	0	0	1089	138	187	107	136							
SOUTHEAST	0	0	47	95	123	136	134	118	92	61	55	47	36	23	10	0	0	978	131	175	103	129							
HORIZ.	0	0	30	83	136	183	219	242	250	242	219	183	136	83	30	0	0	2037	194	286	140	193							

DAILY TOTAL	RADIATION	SAG/DAYTIME	SATGS	SATGD	SAG/ALL DAY	SATGS	SATGD
731.	116.	149.	95.	114.	131.	175.	103.
978.	131.	175.	103.	129.	138.	187.	107.
1089.	126.	167.	101.	125.	126.	167.	101.
902.	110.	138.	91.	108.	126.	167.	101.
624.	126.	167.	101.	125.	138.	187.	107.
902.	131.	175.	103.	129.	104.	286.	140.
1089.	2037.						

MONTH	6	HO	3730.	TOD	81.	TOT	78.	KT	564	KD	.179						
HOURLY SOLAR RADIATION																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0	1	12	25	37	53	75	90	95	90	75	53	37	25	12	1	0
SOUTHWEST	0	1	12	25	37	48	56	61	86	112	127	129	118	91	49	1	0
WEST	0	1	12	25	37	48	56	61	63	104	137	158	163	146	93	1	0
NORTHWEST	0	1	12	25	37	48	56	61	63	71	100	122	135	130	90	1	0
NORTH	0	1	41	52	49	48	56	61	63	61	56	48	49	52	41	1	0
NORTHEAST	0	1	90	130	135	122	100	71	63	61	56	48	37	25	12	1	0
EAST	0	1	93	146	163	158	137	104	63	61	56	48	37	25	12	1	0
SOUTHEAST	0	1	49	91	118	129	127	112	86	61	56	48	37	25	12	1	0
HORIZ.	0	2	36	89	142	188	223	246	253	246	223	188	142	89	36	2	0
DAILY TOTAL RADIATION												SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD			
681.												120. 150.		101. 119.			
952.												136. 178.		110. 135.			
1105.												145. 193.		115. 144.			
952.												136. 178.		110. 135.			
681.												120. 150.		101. 119.			
952.												136. 178.		110. 135.			
1105.												145. 193.		115. 144.			
952.												136. 178.		110. 135.			
2103.												202. 295.		150. 205.			

DAILY TOTAL	RADIATION	SAG/DAYTIME	SATGS	SATGD	SAG/ALL DAY	SATGS	SATGD
681.	120.	150.	101.	119.	136.	178.	110.
952.	136.	178.	110.	135.	145.	193.	115.
1105.	136.	178.	110.	135.	136.	178.	110.
952.	120.	150.	101.	119.	136.	178.	110.
681.	136.	178.	110.	135.	145.	193.	115.
952.	202.	295.	150.	205.			

LOCATION ATLANTA, GEORGIA LATITUDE 33 DEGREES 38 MINUTES

MONTH	7	HO	3627.	TOD	82.	TOT	79.	KT	545	KD	.182						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	10.	23.	36.	59.	82.	96.	101.	96.	82.	59.	36.	23.	10.	0.	0.
SOUTHWEST	0.	0.	10.	23.	36.	47.	55.	60.	90.	115.	129.	131.	118.	90.	44.	0.	0.
WEST	0.	0.	10.	23.	36.	47.	55.	60.	62.	102.	133.	153.	156.	137.	79.	0.	0.
NORTHWEST	0.	0.	10.	23.	36.	47.	55.	60.	62.	64.	92.	113.	124.	118.	74.	0.	0.
NORTH	0.	0.	32.	43.	41.	47.	55.	60.	62.	60.	55.	47.	41.	43.	32.	0.	0.
NORTHEAST	0.	0.	74.	118.	124.	113.	92.	64.	62.	60.	55.	47.	36.	23.	10.	0.	0.
EAST	0.	0.	79.	137.	156.	153.	133.	102.	62.	60.	55.	47.	36.	23.	10.	0.	0.
SOUTHEAST	0.	0.	44.	90.	118.	131.	129.	115.	90.	60.	55.	47.	36.	23.	10.	0.	0.
HORIZ.	0.	0.	29.	80.	132.	178.	213.	235.	242.	235.	213.	178.	132.	80.	29.	0.	0.
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MONTH	8	HO	3318.	TOD	82.	TOT	79.	KT	.559	KD	.180						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	6.	19.	47.	79.	104.	121.	127.	121.	104.	79.	47.	19.	6.	0.	0.
SOUTHWEST	0.	0.	6.	19.	32.	44.	53.	70.	107.	135.	150.	150.	134.	97.	28.	0.	0.
WEST	0.	0.	6.	19.	32.	44.	53.	58.	60.	104.	138.	160.	161.	133.	44.	0.	0.
NORTHWEST	0.	0.	6.	19.	32.	44.	53.	58.	60.	58.	77.	101.	113.	103.	38.	0.	0.
NORTH	0.	0.	13.	23.	32.	44.	53.	58.	60.	58.	53.	44.	32.	23.	13.	0.	0.
NORTHEAST	0.	0.	38.	103.	113.	101.	77.	58.	60.	58.	53.	44.	32.	19.	6.	0.	0.
EAST	0.	0.	44.	133.	161.	160.	138.	104.	60.	58.	53.	44.	32.	19.	6.	0.	0.
SOUTHEAST	0.	0.	28.	97.	134.	150.	150.	135.	107.	70.	53.	44.	32.	19.	6.	0.	0.
HORIZ.	0.	0.	14.	65.	120.	170.	208.	232.	240.	232.	208.	170.	120.	65.	14.	0.	0.

MONTH	9	HO	2827.	TOD	77.	TOT	74.	KT	.515	KD	.186						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	25.	61.	93.	119.	135.	141.	135.	119.	93.	61.	25.	0.	0.	0.
SOUTHWEST	0.	0.	0.	13.	26.	38.	47.	82.	116.	140.	152.	150.	129.	81.	0.	0.	0.
WEST	0.	0.	0.	13.	26.	38.	47.	52.	54.	93.	124.	141.	138.	98.	0.	0.	0.
NORTHWEST	0.	0.	0.	13.	26.	38.	47.	52.	54.	52.	50.	71.	81.	65.	0.	0.	0.
NORTH	0.	0.	0.	13.	26.	38.	47.	52.	54.	52.	47.	38.	26.	13.	0.	0.	0.
NORTHEAST	0.	0.	0.	65.	81.	71.	50.	52.	54.	52.	47.	38.	26.	13.	0.	0.	0.
EAST	0.	0.	0.	98.	138.	141.	124.	93.	54.	52.	47.	38.	26.	13.	0.	0.	0.
SOUTHEAST	0.	0.	0.	81.	129.	150.	152.	140.	116.	82.	47.	38.	26.	13.	0.	0.	0.
HORIZ.	0.	0.	0.	38.	89.	135.	171.	194.	201.	194.	171.	135.	89.	38.	0.	0.	0.
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LOCATION		ATLANTA, GEORGIA		LATITUDE		33 DEGREES		38 MINUTES																
MONTH	10	HO	2264.	TOO	66.	TOT	63.	KT	.543	KD	.182													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH	0.	0.	0.	0.	21.	75.	117.	147.	166.	172.	166.	147.	117.	75.	21.	0.	0.	0.	1222.	152.	221.	103.	135.	
SOUTHWEST	0.	0.	0.	0.	6.	19.	31.	56.	99.	136.	162.	175.	169.	138.	50.	0.	0.	0.	1041.	139.	198.	97.	124.	
WEST	0.	0.	0.	0.	6.	19.	31.	40.	46.	48.	90.	124.	141.	131.	54.	0.	0.	0.	728.	117.	159.	87.	106.	
NORTHWEST	0.	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	48.	58.	29.	0.	0.	0.	410.	95.	118.	77.	87.	
NORTH	0.	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	31.	19.	6.	0.	0.	0.	330.	90.	108.	74.	83.	
NORTHEAST	0.	0.	0.	0.	29.	58.	48.	40.	46.	48.	46.	40.	31.	19.	6.	0.	0.	0.	410.	95.	118.	77.	87.	
EAST	0.	0.	0.	0.	54.	131.	141.	124.	90.	48.	46.	40.	31.	19.	6.	0.	0.	0.	728.	117.	159.	87.	106.	
SOUTHEAST	0.	0.	0.	0.	50.	138.	169.	175.	162.	136.	99.	56.	31.	19.	6.	0.	0.	0.	1041.	139.	198.	97.	124.	
HORIZ.	0.	0.	0.	0.	14.	65.	114.	152.	177.	185.	177.	152.	114.	65.	14.	0.	0.	0.	1230.	152.	222.	103.	135.	
MONTH	11	HO	1762.	TOO	55.	TOT	52.	KT	.510	KD	.187													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH	0.	0.	0.	0.	1.	67.	114.	146.	164.	171.	164.	146.	114.	67.	1.	0.	0.	0.	1153.	142.	214.	89.	119.	
SOUTHWEST	0.	0.	0.	0.	1.	12.	24.	61.	100.	132.	155.	164.	153.	108.	1.	0.	0.	0.	910.	124.	180.	81.	105.	
WEST	0.	0.	0.	0.	1.	12.	24.	32.	38.	40.	77.	105.	116.	94.	1.	0.	0.	0.	538.	96.	129.	69.	83.	
NORTHWEST	0.	0.	0.	0.	1.	12.	24.	32.	38.	40.	38.	32.	25.	31.	1.	0.	0.	0.	273.	76.	93.	61.	68.	
NORTH	0.	0.	0.	0.	1.	12.	24.	32.	38.	40.	38.	32.	24.	12.	1.	0.	0.	0.	253.	74.	90.	60.	67.	
NORTHEAST	0.	0.	0.	0.	1.	31.	25.	32.	38.	40.	38.	32.	24.	12.	1.	0.	0.	0.	273.	76.	93.	61.	68.	
EAST	0.	0.	0.	0.	1.	94.	116.	105.	77.	40.	38.	32.	24.	12.	1.	0.	0.	0.	538.	96.	129.	69.	83.	
SOUTHEAST	0.	0.	0.	0.	1.	108.	153.	164.	155.	132.	100.	61.	24.	12.	1.	0.	0.	0.	910.	124.	180.	81.	105.	
HORIZ.	0.	0.	0.	0.	1.	37.	81.	117.	139.	147.	139.	117.	81.	37.	1.	0.	0.	0.	897.	123.	179.	81.	104.	
MONTH	12	HO	1567.	TOO	48.	TOT	45.	KT	.474	KD	.187													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH	0.	0.	0.	0.	0.	55.	194.	134.	152.	158.	152.	134.	104.	55.	0.	0.	0.	0.	1050.	130.	198.	79.	106.	
SOUTHWEST	0.	0.	0.	0.	0.	10.	24.	59.	93.	122.	142.	148.	135.	86.	0.	0.	0.	0.	818.	112.	165.	71.	93.	
WEST	0.	0.	0.	0.	0.	10.	20.	29.	34.	36.	68.	91.	99.	72.	0.	0.	0.	0.	458.	84.	113.	60.	72.	
NORTHWEST	0.	0.	0.	0.	0.	10.	20.	29.	34.	36.	34.	29.	20.	21.	0.	0.	0.	0.	232.	66.	81.	53.	59.	
NORTH	0.	0.	0.	0.	0.	10.	20.	29.	34.	36.	34.	29.	20.	10.	0.	0.	0.	0.	220.	65.	79.	52.	58.	
NORTHEAST	0.	0.	0.	0.	0.	21.	20.	29.	34.	36.	34.	29.	20.	10.	0.	0.	0.	0.	232.	66.	81.	53.	59.	
EAST	0.	0.	0.	0.	0.	72.	99.	91.	68.	36.	34.	29.	20.	10.	0.	0.	0.	0.	458.	84.	113.	60.	72.	
SOUTHEAST	0.	0.	0.	0.	0.	86.	135.	148.	142.	122.	93.	59.	24.	10.	0.	0.	0.	0.	818.	112.	165.	71.	93.	
HORIZ.	0.	0.	0.	0.	0.	26.	66.	98.	118.	125.	118.	98.	66.	26.	0.	0.	0.	0.	743.	106.	154.	69.	88.	



LOCATION ATLANTA, GEORGIA LATITUDE 33 DEGREES 38 MINUTES  
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	131.	126.	122.	117.	116.	120.	125.	137.	146.	152.	142.	130.	130.
SOUTHWEST	114.	116.	120.	125.	131.	136.	138.	146.	144.	139.	124.	112.	129.
WEST	87.	97.	110.	125.	138.	145.	145.	133.	133.	117.	96.	84.	118.
NORTHWEST	68.	78.	92.	110.	126.	136.	134.	129.	115.	95.	76.	66.	102.
NORTH	66.	73.	82.	95.	110.	120.	119.	113.	105.	90.	74.	65.	93.
NORTHEAST	68.	78.	92.	110.	126.	136.	134.	129.	115.	95.	76.	66.	102.
EAST	87.	97.	110.	125.	138.	145.	145.	133.	133.	117.	96.	84.	118.
SOUTHEAST	114.	116.	120.	125.	131.	136.	138.	146.	144.	139.	124.	112.	129.
HORIZ.	113.	129.	151.	173.	194.	202.	199.	198.	176.	152.	123.	106.	160.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	200.	188.	177.	159.	149.	150.	157.	179.	199.	221.	214.	198.	183.
SOUTHWEST	168.	169.	173.	175.	175.	178.	181.	195.	195.	198.	180.	165.	179.
WEST	120.	136.	154.	174.	187.	193.	192.	194.	176.	159.	129.	113.	161.
NORTHWEST	85.	101.	121.	147.	167.	178.	174.	166.	144.	118.	93.	81.	131.
NORTH	82.	91.	104.	120.	138.	150.	147.	138.	126.	108.	90.	79.	114.
NORTHEAST	85.	101.	121.	147.	167.	178.	174.	166.	144.	118.	93.	81.	131.
EAST	120.	136.	154.	174.	187.	193.	192.	194.	176.	159.	129.	113.	161.
SOUTHEAST	168.	169.	173.	175.	175.	178.	181.	195.	195.	198.	180.	165.	179.
HORIZ.	168.	194.	228.	262.	286.	295.	288.	287.	252.	222.	179.	154.	235.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	80.	82.	86.	90.	95.	101.	104.	109.	109.	103.	89.	79.	94.
SOUTHWEST	73.	77.	85.	95.	103.	110.	112.	114.	108.	97.	81.	71.	94.
WEST	61.	69.	80.	94.	107.	115.	116.	113.	103.	87.	69.	60.	90.
NORTHWEST	53.	60.	71.	86.	101.	110.	110.	105.	93.	77.	61.	53.	82.
NORTH	53.	57.	66.	78.	91.	101.	101.	96.	88.	74.	60.	52.	76.
NORTHEAST	53.	60.	71.	86.	101.	110.	110.	105.	93.	77.	61.	53.	82.
EAST	61.	69.	80.	94.	107.	115.	116.	113.	103.	87.	69.	60.	90.
SOUTHEAST	73.	77.	85.	95.	103.	110.	112.	114.	108.	97.	81.	71.	94.
HORIZ.	73.	83.	100.	121.	140.	150.	147.	142.	124.	103.	81.	60.	111.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	109.	111.	113.	113.	114.	119.	123.	132.	135.	135.	119.	106.	119.
SOUTHWEST	96.	102.	111.	122.	129.	135.	137.	141.	133.	124.	105.	93.	119.
WEST	75.	87.	102.	121.	136.	144.	143.	140.	124.	106.	83.	72.	111.
NORTHWEST	60.	70.	85.	106.	125.	135.	133.	125.	108.	87.	68.	59.	97.
NORTH	59.	66.	77.	91.	108.	119.	117.	109.	99.	83.	67.	58.	88.
NORTHEAST	60.	70.	85.	106.	125.	135.	133.	125.	108.	87.	68.	59.	97.
EAST	75.	87.	102.	121.	136.	144.	143.	140.	124.	106.	83.	72.	111.
SOUTHEAST	96.	102.	111.	122.	129.	135.	137.	141.	133.	124.	105.	93.	119.
HORIZ.	95.	113.	139.	169.	193.	205.	199.	191.	162.	135.	104.	84.	150.



LOCATION BETHEL, ALASKA LATITUDE 60 DEGRFS 46 MINUTES

MONTH	4	H0	2653.	TOD	29.	TOT	27.	KT	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	0.	2.	10.	40.	98.	153.	197.	226.	236.	226.	197.	153.	98.	40.	10.	2.	0.	1689.	116.	187.
SOUTHWEST	0.	2.	10.	18.	26.	33.	65.	127.	180.	218.	237.	234.	208.	158.	87.	9.	0.	1611.	112.	180.
WEST	0.	2.	10.	18.	26.	33.	39.	42.	44.	107.	160.	198.	212.	194.	131.	16.	0.	1231.	93.	144.
NORTHWEST	0.	2.	10.	18.	26.	33.	39.	42.	44.	42.	39.	65.	107.	127.	104.	15.	0.	714.	66.	96.
NORTH	0.	7.	22.	18.	26.	33.	39.	42.	44.	42.	39.	33.	26.	18.	22.	7.	0.	420.	51.	69.
NORTHEAST	0.	15.	104.	127.	107.	65.	39.	42.	44.	42.	39.	33.	26.	18.	10.	2.	0.	714.	66.	96.
EAST	0.	16.	131.	194.	212.	198.	160.	107.	44.	42.	39.	33.	26.	18.	10.	2.	0.	1231.	93.	144.
SOUTHEAST	0.	9.	87.	158.	208.	234.	237.	218.	180.	127.	65.	33.	26.	18.	10.	2.	0.	1611.	112.	180.
HORIZ.	0.	5.	35.	77.	120.	158.	188.	206.	213.	206.	188.	158.	120.	77.	35.	5.	0.	1791.	122.	197.

MONTH	5	H0	3403.	TOD	43.	TOT	40.	KT	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	4.	10.	18.	31.	68.	102.	130.	148.	154.	148.	130.	102.	68.	31.	18.	10.	4.	1176.	98.	140.
SOUTHWEST	4.	10.	18.	26.	33.	40.	52.	91.	123.	146.	158.	156.	141.	114.	77.	37.	6.	1231.	100.	145.
WEST	4.	10.	18.	26.	33.	40.	44.	48.	49.	87.	119.	141.	151.	145.	121.	75.	15.	1124.	95.	136.
NORTHWEST	4.	10.	18.	26.	33.	40.	44.	48.	49.	48.	44.	67.	92.	106.	103.	76.	18.	824.	81.	111.
NORTH	12.	37.	36.	26.	33.	40.	44.	48.	49.	48.	44.	40.	33.	26.	36.	37.	12.	600.	71.	92.
NORTHEAST	18.	76.	103.	106.	92.	67.	44.	48.	49.	48.	44.	40.	33.	26.	18.	10.	4.	824.	81.	111.
EAST	15.	75.	121.	145.	151.	141.	119.	87.	49.	48.	44.	40.	33.	26.	18.	10.	4.	1124.	95.	136.
SOUTHEAST	6.	37.	77.	114.	141.	156.	158.	146.	123.	91.	52.	40.	33.	26.	18.	10.	4.	1231.	100.	145.
HORIZ.	7.	28.	57.	89.	119.	146.	166.	179.	184.	179.	166.	146.	119.	89.	57.	28.	7.	1766.	126.	189.

MONTH	6	H0	3712.	TOD	55.	TOT	53.	KT	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	6.	13.	20.	29.	59.	87.	109.	123.	128.	123.	109.	87.	59.	29.	20.	13.	6.	1021.	100.	134.
SOUTHWEST	6.	13.	20.	27.	34.	40.	48.	79.	105.	123.	132.	130.	118.	97.	68.	37.	11.	1092.	103.	140.
WEST	6.	13.	20.	27.	34.	40.	45.	47.	48.	79.	104.	121.	129.	124.	107.	75.	32.	1054.	102.	137.
NORTHWEST	6.	13.	20.	27.	34.	40.	45.	47.	48.	47.	45.	65.	84.	95.	94.	77.	38.	828.	92.	119.
NORTH	26.	41.	38.	27.	34.	40.	45.	47.	48.	47.	45.	40.	34.	27.	38.	41.	26.	647.	84.	105.
NORTHEAST	38.	77.	94.	95.	84.	65.	45.	47.	48.	47.	45.	40.	34.	27.	20.	13.	6.	828.	92.	119.
EAST	32.	75.	107.	124.	129.	121.	104.	79.	48.	47.	45.	40.	34.	27.	20.	13.	6.	1054.	102.	137.
SOUTHEAST	11.	37.	68.	97.	118.	130.	132.	123.	105.	79.	48.	40.	34.	27.	20.	13.	6.	1092.	103.	140.
HORIZ.	14.	35.	60.	88.	114.	136.	153.	164.	168.	164.	153.	136.	114.	88.	60.	35.	14.	1701.	130.	187.

LOCATION		BETHEL, ALASKA		LATITUDE		60 DEGREES		46 MINUTES															
MONTH	7	HO	3411.	TOT	57.	TOT	54.	KT	.398	KD	.183												
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD
SOUTH	4.	10.	16.	27.	52.	76.	76.	95.	107.	112.	107.	95.	76.	52.	27.	16.	10.	4.	886.	98.	130.	85.	108.
SOUTHWEST	4.	10.	16.	23.	30.	36.	36.	45.	71.	92.	106.	113.	110.	99.	80.	54.	26.	5.	921.	100.	133.	86.	110.
WEST	4.	10.	16.	23.	30.	36.	36.	40.	43.	44.	68.	88.	101.	106.	100.	82.	51.	11.	851.	97.	127.	84.	106.
NORTHWEST	4.	10.	16.	23.	30.	36.	36.	40.	43.	44.	43.	40.	54.	68.	75.	71.	51.	13.	659.	88.	111.	77.	94.
NORTH	9.	27.	28.	23.	30.	36.	36.	40.	43.	44.	43.	40.	36.	30.	23.	28.	27.	9.	516.	81.	100.	72.	86.
NORTHEAST	13.	51.	71.	75.	68.	54.	54.	40.	43.	44.	43.	40.	36.	30.	23.	16.	10.	4.	659.	88.	111.	77.	94.
EAST	11.	51.	82.	100.	106.	101.	101.	88.	68.	44.	43.	40.	36.	30.	23.	16.	10.	4.	851.	97.	127.	84.	106.
SOUTHEAST	5.	26.	54.	80.	99.	110.	113.	106.	92.	71.	45.	36.	30.	30.	23.	16.	10.	4.	921.	100.	133.	86.	110.
HORIZ.	7.	23.	45.	69.	91.	111.	127.	136.	139.	136.	127.	111.	91.	69.	45.	23.	7.		1357.	120.	169.	101.	137.
MONTH	8	HO	2640.	TOT	55.	TOT	53.	KT	.336	KD	.180												
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD
SOUTH	0.	3.	9.	22.	43.	63.	63.	80.	90.	94.	90.	80.	63.	43.	22.	9.	3.	0.	715.	94.	124.	77.	96.
SOUTHWEST	0.	3.	9.	16.	22.	28.	28.	40.	60.	77.	88.	91.	88.	76.	56.	31.	4.	0.	689.	93.	121.	76.	94.
WEST	0.	3.	9.	16.	22.	28.	28.	32.	35.	36.	54.	69.	77.	77.	67.	43.	6.	0.	574.	86.	110.	72.	87.
NORTHWEST	0.	3.	9.	16.	22.	28.	28.	32.	35.	36.	35.	32.	37.	46.	47.	36.	6.	0.	421.	78.	96.	67.	78.
NORTH	0.	4.	13.	16.	22.	28.	28.	32.	35.	36.	35.	32.	28.	22.	16.	13.	4.	0.	337.	73.	87.	64.	73.
NORTHEAST	0.	6.	36.	47.	46.	37.	32.	35.	35.	36.	35.	32.	28.	22.	16.	9.	3.	0.	421.	78.	96.	67.	78.
EAST	0.	6.	43.	67.	77.	77.	69.	54.	36.	35.	35.	32.	28.	22.	16.	9.	3.	0.	574.	86.	110.	72.	87.
SOUTHEAST	0.	4.	31.	56.	76.	88.	91.	88.	77.	60.	40.	28.	22.	22.	16.	9.	3.	0.	689.	93.	121.	76.	94.
HORIZ.	0.	5.	21.	40.	60.	77.	91.	99.	102.	99.	91.	77.	60.	40.	21.	5.	0.		888.	103.	141.	83.	106.
MONTH	9	HO	1689.	TOT	47.	TOT	45.	KT	.406	KD	.183												
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD
SOUTH	0.	0.	0.	17.	49.	80.	106.	122.	127.	122.	106.	80.	49.	17.	0.	0.	0.	0.	874.	106.	152.	75.	98.
SOUTHWEST	0.	0.	0.	7.	14.	21.	44.	74.	69.	115.	120.	112.	88.	44.	0.	0.	0.	0.	738.	97.	135.	71.	90.
WEST	0.	0.	0.	7.	14.	21.	26.	29.	30.	57.	79.	90.	83.	49.	0.	0.	0.	0.	485.	80.	105.	62.	75.
NORTHWEST	0.	0.	0.	7.	14.	21.	26.	29.	30.	29.	26.	27.	39.	30.	0.	0.	0.	0.	277.	66.	80.	55.	62.
NORTH	0.	0.	0.	7.	14.	21.	26.	29.	30.	29.	26.	21.	14.	7.	0.	0.	0.	0.	223.	62.	74.	53.	59.
NORTHEAST	0.	0.	0.	30.	39.	27.	26.	29.	30.	29.	26.	21.	14.	7.	0.	0.	0.	0.	277.	66.	80.	55.	62.
EAST	0.	0.	0.	49.	83.	90.	79.	57.	30.	29.	26.	21.	14.	7.	0.	0.	0.	0.	485.	80.	105.	62.	75.
SOUTHEAST	0.	0.	0.	44.	88.	112.	120.	115.	99.	74.	44.	21.	14.	7.	0.	0.	0.	0.	738.	97.	135.	71.	90.
SORIZ.	0.	0.	1.	17.	41.	63.	81.	92.	96.	92.	81.	63.	41.	17.	1.	0.	0.	0.	685.	94.	129.	69.	87.



# LOCATION BETHEL, ALASKA

LATITUDE 60 DEGREES 46 MINUTES

MONTH	10	HO	859.	TOD	34.	TOT	32.	KT	432	KD	.185-												
HOURLY SOLAR RADIATION																							
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGD	
SOUTH	0.	0.	0.	0.	18.	72.	112.	137.	145.	137.	112.	72.	18.	0.	0.	0.	0.	823.	101.	157.	58.	80.	
SOUTHWEST	0.	0.	0.	0.	4.	10.	44.	79.	108.	125.	124.	97.	30.	0.	0.	0.	0.	622.	85.	127.	52.	68.	
WEST	0.	0.	0.	0.	4.	10.	15.	19.	20.	51.	72.	71.	27.	0.	0.	0.	0.	291.	58.	77.	41.	49.	
NORTHWEST	0.	0.	0.	0.	4.	10.	15.	19.	20.	19.	15.	10.	10.	0.	0.	0.	0.	123.	44.	52.	36.	39.	
NORTH	0.	0.	0.	0.	4.	10.	15.	19.	20.	19.	15.	10.	4.	0.	0.	0.	0.	117.	43.	51.	36.	39.	
NORTHEAST	0.	0.	0.	0.	10.	10.	15.	19.	20.	19.	15.	10.	4.	0.	0.	0.	0.	123.	44.	52.	36.	39.	
EAST	0.	0.	0.	0.	27.	71.	72.	51.	20.	19.	15.	10.	4.	0.	0.	0.	0.	291.	58.	77.	41.	49.	
SOUTHEAST	0.	0.	0.	0.	30.	97.	124.	125.	108.	79.	44.	10.	4.	0.	0.	0.	0.	622.	85.	127.	52.	68.	
HORIZ.	0.	0.	0.	0.	8.	30.	50.	63.	68.	63.	50.	30.	8.	0.	0.	0.	0.	372.	64.	89.	44.	53.	

DAILY TOTAL RADIATION	823.	622.	291.	123.	117.	123.	291.	622.	372.
SAG/DAYTIME SATGS	101.	85.	58.	44.	43.	44.	58.	85.	64.
SAG/ALL DAY SATGS	157.	127.	77.	52.	51.	52.	77.	127.	89.
80.	58.	68.	49.	39.	39.	36.	41.	68.	53.

MONTH	11	HO	317.	TOD	19.	TOT	17.	KT,	399	KD	.183												
HOURLY SOLAR RADIATION																							
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
SOUTH	0.	0.	0.	0.	0.	2.	69.	120.	136.	120.	69.	2.	0.	0.	0.	0.	0.						
SOUTHWEST	0.	0.	0.	0.	0.	1.	26.	67.	99.	107.	74.	2.	0.	0.	0.	0.	0.						
WEST	0.	0.	0.	0.	0.	1.	6.	9.	10.	37.	39.	2.	0.	0.	0.	0.	0.						
NORTHWEST	0.	0.	0.	0.	0.	0.	1.	6.	9.	10.	9.	6.	1.	0.	0.	0.	0.						
NORTH	0.	0.	0.	0.	0.	1.	6.	9.	10.	9.	6.	1.	0.	0.	0.	0.	0.						
NORTHEAST	0.	0.	0.	0.	0.	1.	6.	9.	10.	9.	6.	1.	0.	0.	0.	0.	0.						
EAST	0.	0.	0.	0.	0.	2.	39.	37.	10.	9.	6.	1.	0.	0.	0.	0.	0.						
SOUTHEAST	0.	0.	0.	0.	0.	2.	74.	107.	99.	67.	26.	1.	0.	0.	0.	0.	0.						
HORIZ.	0.	0.	0.	0.	0.	2.	15.	29.	34.	29.	15.	2.	0.	0.	0.	0.	0.						
												DAILY TOTAL RADIATION							SAG/DAYTIME SAG/ALL DAY				
																			SATGS	SATGD	SATGS	SATGD	
																			518.	79.	129.	34.	47.
																			378.	63.	99.	29.	39.
																			105.	31.	41.	20.	23.
																			42.	24.	28.	18.	19.
																			42.	24.	28.	18.	19.
																			42.	24.	28.	18.	19.
																			105.	31.	41.	20.	23.
																			378.	63.	99.	29.	39.
																			127.	34.	46.	21.	24.

DAILY TOTAL RADIATION	518.	378.	105.	42.	42.	105.	378.	127.
SAG/DAYTIME SATGS	79.	63.	31.	24.	24.	31.	63.	34.
SAG/ALL DAY SATGS	129.	99.	41.	28.	28.	41.	99.	46.
47.	34.	29.	23.	19.	19.	23.	29.	24.

MONTH	12	HO	158.	TOD	9.	TOT	7.	KT	.459	KD	.186						
HOURLY SOLAR RADIATION																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	0.	0.	21.	138.	183.	138.	21.	0.	0.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	0.	0.	9.	76.	131.	122.	23.	0.	0.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	0.	0.	2.	6.	7.	38.	12.	0.	0.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	0.	0.	2.	6.	7.	6.	2.	0.	0.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	0.	0.	2.	6.	7.	6.	2.	0.	0.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	0.	0.	2.	6.	7.	6.	2.	0.	0.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	0.	0.	12.	39.	7.	6.	2.	0.	0.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	0.	0.	23.	122.	131.	76.	9.	0.	0.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	0.	0.	4.	19.	26.	19.	4.	0.	0.	0.	0.	0.	0.
DAILY TOTAL RADIATION												502.	83.	144.	23.	36.	
SAG/DAYTIME SATGS												361.	63.	106.	19.	28.	
SATGS												65.	19.	27.	9.	11.	
SATGS												22.	13.	15.	8.	8.	
SATGS												22.	13.	15.	8.	8.	
SATGS												13.	15.	15.	8.	8.	
SATGS												65.	19.	27.	9.	11.	
SATGS												361.	63.	106.	19.	28.	
SATGS												73.	20.	29.	10.	11.	

DAILY TOTAL RADIATION	502.	361.	65.	22.	22.	65.	502.	73.
SAG/DAYTIME SATGS	83.	63.	19.	13.	13.	19.	63.	20.
SAG/ALL DAY SATGS	144.	106.	27.	15.	15.	27.	106.	29.
36.	23.	28.	11.	8.	8.	11.	28.	11.

LOCATION	BETHEL, ALASKA		LATITUDE 60 DEGREES 46 MINUTES											
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)														
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE	
SOUTH	106.	112.	135.	116.	98.	100.	98.	94.	106.	101.	79.	83.	102.	
SOUTHWEST	79.	86.	113.	112.	100.	103.	100.	93.	97.	85.	63.	63.	91.	
WEST	27.	45.	73.	93.	95.	102.	97.	86.	80.	58.	31.	19.	67.	
NORTHWEST	15.	23.	39.	66.	81.	92.	88.	78.	66.	44.	24.	13.	52.	
NORTH	15.	22.	30.	51.	71.	84.	81.	73.	62.	43.	24.	13.	47.	
NORTHEAST	15.	23.	39.	66.	81.	92.	88.	78.	66.	44.	24.	13.	52.	
EAST	27.	45.	73.	93.	95.	102.	97.	86.	80.	58.	31.	19.	67.	
SOUTHEAST	79.	86.	113.	112.	100.	103.	100.	93.	97.	85.	63.	63.	91.	
HORIZ.	29.	52.	90.	122.	126.	130.	120.	103.	94.	64.	34.	20.	82.	
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)														
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE	
SOUTH	184.	193.	233.	187.	140.	134.	130.	124.	152.	157.	129.	144.	159.	
SOUTHWEST	136.	147.	194.	180.	145.	140.	133.	121.	135.	127.	99.	106.	139.	
WEST	41.	72.	120.	144.	136.	137.	127.	110.	105.	77.	41.	27.	95.	
NORTHWEST	19.	33.	59.	96.	111.	119.	111.	96.	80.	52.	28.	15.	68.	
NORTH	19.	31.	42.	69.	92.	105.	100.	87.	74.	51.	28.	15.	59.	
NORTHEAST	19.	33.	59.	96.	111.	119.	111.	96.	80.	52.	28.	15.	68.	
EAST	41.	72.	120.	144.	136.	137.	127.	110.	105.	77.	41.	27.	95.	
SOUTHEAST	136.	147.	194.	180.	145.	140.	133.	121.	135.	127.	99.	106.	139.	
HORIZ.	46.	85.	152.	197.	189.	187.	169.	141.	129.	89.	46.	29.	121.	
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)														
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE	
SOUTH	34.	48.	72.	81.	80.	88.	85.	77.	75.	58.	34.	23.	63.	
SOUTHWEST	26.	38.	61.	78.	82.	90.	86.	76.	71.	52.	29.	19.	59.	
WEST	12.	22.	41.	66.	78.	89.	84.	72.	62.	41.	20.	9.	50.	
NORTHWEST	8.	14.	24.	50.	68.	81.	77.	67.	55.	36.	18.	8.	42.	
NORTH	8.	13.	19.	40.	61.	75.	72.	64.	53.	36.	18.	8.	39.	
NORTHEAST	8.	14.	24.	50.	68.	81.	77.	67.	55.	36.	18.	8.	42.	
EAST	12.	22.	41.	66.	78.	89.	84.	72.	62.	41.	20.	9.	50.	
SOUTHEAST	26.	38.	61.	78.	82.	90.	86.	76.	71.	52.	29.	19.	59.	
HORIZ.	12.	25.	50.	84.	100.	111.	101.	83.	69.	44.	21.	10.	59.	
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)														
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE	
SOUTH	55.	80.	122.	125.	111.	114.	108.	96.	98.	80.	47.	36.	89.	
SOUTHWEST	42.	62.	102.	121.	114.	119.	110.	94.	90.	68.	39.	28.	82.	
WEST	16.	33.	65.	99.	108.	116.	106.	87.	75.	49.	23.	11.	66.	
NORTHWEST	10.	17.	34.	68.	90.	103.	94.	78.	62.	39.	19.	8.	52.	
NORTH	10.	17.	26.	51.	76.	92.	86.	71.	59.	39.	19.	8.	46.	
NORTHEAST	10.	17.	34.	68.	90.	103.	94.	78.	62.	39.	19.	8.	52.	
EAST	16.	33.	65.	99.	108.	116.	106.	87.	75.	49.	23.	11.	66.	
SOUTHEAST	42.	62.	102.	121.	114.	119.	110.	94.	90.	68.	39.	28.	82.	
HORIZ.	17.	38.	81.	131.	147.	155.	137.	106.	87.	53.	24.	11.	82.	

LOCATION BISMARCK, NORTH DAKOTA LATITUDE 46 DEGREES 46 MINUTES

MONTH	1	HO	1056.	TOD	12.	TOT	9.	KT	.594	KD	.175						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	31.	126.	184.	217.	228.	217.	184.	126.	31.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	4.	19.	71.	124.	169.	198.	202.	167.	50.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	4.	13.	21.	26.	28.	78.	114.	118.	42.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	4.	13.	21.	26.	28.	26.	21.	13.	12.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	4.	13.	21.	26.	28.	26.	21.	13.	4.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	12.	13.	21.	26.	28.	26.	21.	13.	4.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	42.	118.	114.	78.	28.	26.	21.	13.	4.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	50.	167.	202.	198.	169.	124.	71.	19.	4.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	9.	49.	86.	110.	118.	110.	86.	49.	9.	0.	0.	0.	0.

MONTH	2	HO	1649.	TOD	16.	TOT	13.	KT	.628	KD	.167						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	5.	84.	148.	194.	222.	232.	222.	194.	148.	84.	5.	0.	0.	0.
SOUTHWEST	0.	0.	0.	2.	12.	22.	70.	126.	175.	209.	222.	209.	153.	11.	0.	0.	0.
WEST	0.	0.	0.	2.	12.	22.	30.	35.	37.	94.	138.	161.	139.	11.	0.	0.	0.
NORTHWEST	0.	0.	0.	2.	12.	22.	30.	35.	37.	35.	30.	31.	51.	6.	0.	0.	0.
NORTH	0.	0.	0.	2.	12.	22.	30.	35.	37.	35.	30.	22.	12.	2.	0.	0.	0.
NORTHEAST	0.	0.	0.	6.	51.	31.	30.	35.	37.	35.	30.	22.	12.	2.	0.	0.	0.
EAST	0.	0.	0.	11.	139.	161.	138.	94.	37.	35.	30.	22.	12.	2.	0.	0.	0.
SOUTHEAST	0.	0.	0.	11.	153.	209.	222.	209.	175.	126.	70.	22.	12.	2.	0.	0.	0.
HORIZ.	0.	0.	0.	4.	46.	94.	133.	158.	166.	158.	133.	94.	46.	4.	0.	0.	0.

MONTH	3	HO	2349.	TOD	30.	TOT	27.	KT	.605	KD									
ORIENTATION																			
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
SOUTH	0.	0.	0.	31.	83.	131.	168.	192.	200.	192.	168.	131.	83.	31.	0.	0.	0.		
SOUTHWEST	0.	0.	0.	10.	22.	32.	58.	110.	155.	187.	203.	198.	169.	102.	0.	0.	0.		
WEST	0.	0.	0.	10.	22.	32.	40.	45.	46.	99.	142.	168.	168.	119.	0.	0.	0.		
NORTHWEST	0.	0.	0.	10.	22.	32.	40.	45.	46.	45.	40.	59.	82.	72.	0.	0.	0.		
NORTH	0.	0.	0.	10.	22.	32.	40.	45.	46.	45.	40.	32.	22.	10.	0.	0.	0.		
NORTHEAST	0.	0.	0.	72.	82.	59.	40.	45.	46.	45.	40.	32.	22.	10.	0.	0.	0.		
EAST	0.	0.	0.	119.	168.	142.	99.	46.	45.	40.	32.	22.	10.	0.	0.	0.	0.		
SOUTHEAST	0.	0.	0.	102.	169.	198.	203.	187.	155.	110.	58.	32.	22.	10.	0.	0.	0.		
HORIZ.	0.	0.	0.	34.	85.	132.	168.	191.	109.	101.	168.	132.	85.	34.	0.	0.	0.		
DAILY TOTAL RADIATION																			
SAG/DAYTIME SATGS SATGD																			
SAG/ALL DAY SATGS SATG																			
1408. 120. 193. 72. 109.																			
1246. 109. 174. 67. 99.																			
892. 87. 133. 55. 79.																			
493. 61. 87. 43. 55.																			
344. 52. 70. 38. 47.																			
61. 87. 43. 55.																			
802. 87. 133. 55. 79.																			
1246. 109. 174. 67. 99.																			
1420. 120. 194. 72. 109.																			

LOCATION	BISMARCK, NORTH DAKOTA	LATITUDE	46 DEGREES	46 MINUTES
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MONTH	ORIENTATION	4	H0	3081.	TOD	47.	TOT	HOURLY SOLAR RADIATION						KT	.565	KD	.17 <sup>a</sup>	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
								5	6	7	8	9	10						11	12	13	14
	SOUTH	0.	0.	8.	25.	65.	103.	134.	153.	160.	153.	134.	103.	65.	25.	8.	0.	1135.	110.	162.	80.	109.
	SOUTHWEST	0.	0.	8.	19.	31.	40.	47.	90.	129.	157.	171.	169.	150.	112.	50.	0.	1174.	112.	166.	81.	112.
	WEST	0.	0.	8.	19.	31.	40.	47.	52.	54.	99.	136.	160.	166.	145.	77.	0.	1034.	105.	152.	76.	103.
	NORTHWEST	0.	0.	8.	19.	31.	40.	47.	52.	54.	52.	49.	80.	102.	104.	64.	0.	703.	86.	118.	66.	84.
	NORTH	0.	0.	18.	19.	31.	40.	47.	52.	54.	52.	47.	40.	31.	19.	18.	0.	469.	73.	94.	58.	70.
	NORTHEAST	0.	0.	64.	104.	102.	80.	49.	52.	54.	52.	47.	40.	31.	19.	8.	0.	703.	86.	118.	66.	84.
	EAST	0.	0.	77.	145.	156.	160.	136.	99.	54.	52.	47.	40.	31.	19.	8.	0.	1034.	105.	152.	76.	103.
	SOUTHEAST	0.	0.	50.	112.	150.	169.	171.	157.	129.	90.	47.	40.	31.	19.	8.	0.	1174.	112.	166.	81.	112.
	HORIZ.	0.	0.	22.	68.	115.	157.	189.	210.	217.	210.	189.	157.	115.	68.	22.	0.	1741.	144.	224.	99.	145.

MONTH	5	H0	3576.	T00	59.	T0T	55.	HOURLY SOLAR RADIATION								.58R	KD	.176				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH	0	4	14	25	54	91	120	139	146	139	120	91	54	25	14	4	0	1041.	115.	159.	90.	118.
SOUTHWEST	0	4	14	25	36	45	52	81	120	148	164	164	148	117	70	13	0	1202.	124.	174.	96.	127.
WEST	0	4	14	25	36	45	52	57	58	104	142	168	177	164	119	27	0	1192.	123.	173.	96.	127.
NORTHWEST	0	4	14	25	36	45	52	57	58	57	68	100	123	130	107	27	0	902.	108.	145.	86.	109.
NORTH	0	14	41	34	36	45	52	57	58	57	52	45	36	34	41	14	0	617.	92.	118.	76.	92.
NORTHEAST	0	27	107	130	123	100	68	57	58	57	52	45	36	25	14	4	0	902.	108.	145.	86.	109.
EAST	0	27	119	164	177	168	142	104	58	57	52	45	36	25	14	4	0	1192.	123.	173.	96.	127.
SOUTHEAST	0	13	70	117	118	164	164	148	120	81	52	45	36	25	14	4	0	1202.	124.	174.	96.	127.
HORIZ.	0	9	47	95	143	184	216	236	243	216	184	143	95	47	9	0	0	2103.	173.	261.	127.	182.

MONTH	6	ORIENTATION	4	H0	3762.	T00	68.	T0T	64.	KT	.57q	KD	.177	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
														5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		SATGS	SATGd	SATGS	SATGd
		SOUTH	0	6	17	27	48	83	111	128	135	128	111	83	48	27	17	6	0	975	119	158	98	123										
		SOUTHWEST	0	6	17	27	38	47	53	76	113	140	154	155	140	112	70	21	0	1168	129	176	104	135										
		WEST	0	6	17	27	38	47	53	58	59	103	139	163	172	162	124	49	0	1217	132	181	106	138										
		NORTHWEST	0	6	17	27	38	47	53	58	59	58	73	104	126	133	115	51	0	965	118	157	97	123										
		NORTH	0	28	49	42	38	47	53	58	59	58	53	47	38	42	49	28	0	687	104	132	88	106										
		NORTHEAST	0	51	115	133	126	104	73	58	59	58	53	47	38	27	17	6	0	965	118	157	97	123										
		EAST	0	49	124	162	172	163	139	103	59	58	53	47	38	27	17	6	0	1217	132	181	106	138										
		SOUTHEAST	0	21	70	112	140	155	154	140	113	76	53	47	38	27	17	6	0	1168	129	176	104	135										
		HORIZ.	0	16	56	103	148	198	219	238	244	238	219	188	148	103	56	16	0	2178	182	270	139	196										





LOCATION BISMARCK, NORTH DAKOTA LATITUDE 46 DEGREES 46 MINUTES

MONTH	10	HO	1617.	TOD	50.	TOT	46.	HOURLY SOLAR RADIATION								KT	584	KD	DAILY TOTAL RADIATION				SAG/DAYTIME	SAG/ALL DAY
				7	8	9	10	11	12	13	14	15	16	17	18	19	20		SAT6S	SAT6D	SAT6S	SAT6D		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20							
SOUTH	0.	0.	0.	3.	72.	132.	175.	201.	210.	201.	175.	132.	72.	3.	0.	0.	0.	1375.	151.	234.	90.	126.		
SOUTHWEST	0.	0.	0.	2.	12.	22.	65.	116.	159.	199.	184.	130.	5.	0.	0.	0.	0.	1083.	129.	195.	80.	109.		
WEST	0.	0.	0.	2.	12.	22.	30.	35.	76.	86.	125.	142.	118.	6.	0.	0.	0.	613.	95.	132.	65.	81.		
NORTHWEST	0.	0.	0.	2.	12.	22.	30.	35.	76.	35.	30.	29.	44.	4.	0.	0.	0.	278.	70.	87.	55.	62.		
NORTH	0.	0.	0.	2.	12.	22.	30.	35.	76.	35.	30.	22.	12.	2.	0.	0.	0.	237.	67.	81.	53.	59.		
NORTHEAST	0.	0.	0.	4.	44.	29.	30.	35.	76.	35.	30.	22.	12.	2.	0.	0.	0.	278.	70.	87.	55.	62.		
EAST	0.	0.	0.	6.	118.	142.	125.	86.	76.	35.	30.	22.	12.	2.	0.	0.	0.	613.	95.	132.	65.	81.		
SOUTHEAST	0.	0.	0.	5.	130.	184.	199.	189.	159.	116.	65.	22.	12.	2.	0.	0.	0.	1083.	129.	195.	80.	109.		
HORIZ.	0.	0.	0.	3.	41.	85.	122.	145.	153.	145.	122.	85.	41.	3.	0.	0.	0.	943.	119.	176.	76.	101.		

DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS
1375.	151.	234.	90.
1083.	129.	195.	80.
613.	95.	132.	55.
278.	70.	87.	55.
237.	67.	81.	53.
278.	70.	87.	55.
613.	95.	132.	65.
1083.	129.	195.	80.
943.	119.	176.	76.

MONTH 11	HO 1045.	TOD	31.	TOT	28.	KT	510	KD	187
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ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	22.	99.	146.	173.	182.	173.	146.	99.	22.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	4.	17.	59.	101.	136.	158.	160.	130.	35.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	4.	13.	20.	25.	27.	65.	92.	92.	30.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	4.	13.	20.	25.	27.	25.	20.	13.	9.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	4.	13.	20.	25.	27.	25.	20.	13.	4.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	9.	13.	20.	25.	27.	25.	20.	13.	4.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	30.	92.	92.	65.	27.	25.	20.	13.	4.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	35.	130.	160.	158.	136.	101.	59.	17.	4.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	9.	42.	73.	93.	100.	93.	73.	42.	9.	0.	0.	0.	0.

DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS
1061.	123.	197.	62.
800.	100.	156.	54.
368.	63.	89.	40.
157.	45.	56.	33.
151.	44.	55.	33.
157.	45.	56.	33.
368.	63.	89.	40.
800.	100.	156.	54.
533.	77.	115.	46.

MONTH 12	HO 840.	TOD	18.	TOT	15.	KT	547	KD	181
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ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	2.	97.	161.	195.	206.	195.	161.	97.	2.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	1.	17.	64.	112.	152.	176.	173.	125.	2.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	1.	9.	17.	22.	23.	66.	94.	86.	2.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	1.	9.	17.	22.	23.	22.	17.	9.	1.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	1.	9.	17.	22.	23.	22.	17.	9.	1.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	1.	9.	17.	22.	23.	22.	17.	9.	1.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	2.	86.	94.	66.	23.	22.	17.	9.	1.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	2.	125.	173.	176.	152.	112.	64.	17.	1.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	2.	31.	64.	86.	94.	86.	64.	31.	2.	0.	0.	0.	0.

DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS
1114.	121.	205.	51.
824.	94.	157.	42.
321.	48.	72.	26.
122.	30.	39.	19.
122.	30.	39.	19.
122.	30.	39.	19.
122.	30.	39.	19.
321.	48.	72.	26.
824.	94.	157.	42.
459.	61.	95.	30.

LOCATION BISMARCK, NORTH DAKOTA LATITUDE 46 DEGREES 46 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	128.	129.	120.	110.	115.	119.	136.	146.	151.	151.	123.	121.	129.
SOUTHWEST	98.	105.	109.	112.	124.	129.	146.	148.	141.	129.	100.	94.	120.
WEST	50.	68.	87.	105.	123.	132.	145.	138.	119.	95.	63.	48.	98.
NORTHWEST	26.	37.	61.	86.	108.	118.	128.	117.	94.	70.	45.	30.	77.
NORTH	26.	34.	52.	73.	92.	104.	110.	102.	85.	67.	44.	30.	68.
NORTHEAST	26.	37.	61.	86.	108.	118.	128.	117.	94.	70.	45.	30.	77.
EAST	50.	68.	87.	105.	123.	132.	145.	138.	119.	95.	63.	48.	98.
SOUTHEAST	98.	105.	109.	112.	124.	129.	146.	148.	141.	129.	100.	94.	120.
HORIZ.	66.	92.	120.	144.	173.	182.	199.	184.	154.	119.	77.	61.	131.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	221.	221.	193.	162.	159.	158.	182.	201.	220.	234.	197.	205.	196.
SOUTHWEST	169.	177.	174.	166.	174.	176.	199.	205.	202.	195.	156.	157.	179.
WEST	81.	107.	133.	152.	173.	181.	198.	188.	163.	132.	89.	72.	139.
NORTHWEST	38.	55.	87.	118.	145.	157.	167.	150.	119.	87.	56.	39.	101.
NORTH	37.	48.	70.	94.	118.	132.	136.	123.	103.	81.	55.	39.	86.
NORTHEAST	38.	55.	87.	118.	145.	157.	167.	150.	119.	87.	56.	39.	101.
EAST	81.	107.	133.	152.	173.	181.	198.	188.	163.	132.	89.	72.	139.
SOUTHEAST	169.	177.	174.	166.	174.	176.	199.	205.	202.	195.	156.	157.	179.
HORIZ.	110.	154.	194.	224.	261.	270.	294.	269.	225.	176.	115.	95.	199.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	52.	62.	72.	80.	90.	98.	110.	111.	104.	90.	62.	51.	82.
SOUTHWEST	41.	52.	67.	81.	96.	104.	116.	112.	99.	80.	54.	42.	79.
WEST	23.	35.	55.	76.	96.	106.	116.	107.	87.	65.	40.	26.	69.
NORTHWEST	14.	22.	43.	66.	86.	97.	105.	94.	75.	55.	33.	18.	59.
NORTH	14.	20.	38.	58.	76.	88.	94.	85.	70.	53.	33.	19.	54.
NORTHEAST	14.	20.	38.	58.	76.	88.	94.	85.	70.	53.	33.	19.	54.
EAST	23.	35.	55.	76.	96.	106.	116.	107.	87.	65.	40.	26.	69.
SOUTHEAST	41.	52.	67.	81.	96.	104.	116.	112.	99.	80.	54.	42.	79.
HORIZ.	29.	46.	72.	99.	127.	139.	150.	133.	105.	76.	46.	30.	88.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	87.	102.	109.	109.	118.	123.	139.	143.	138.	126.	90.	80.	114.
SOUTHWEST	68.	83.	99.	112.	127.	135.	150.	145.	129.	109.	75.	63.	108.
WEST	35.	52.	79.	103.	127.	138.	149.	135.	109.	81.	50.	34.	91.
NORTHWEST	19.	30.	55.	84.	109.	123.	129.	113.	87.	62.	38.	23.	73.
NORTH	18.	27.	47.	70.	92.	106.	110.	98.	79.	59.	37.	23.	64.
NORTHEAST	19.	30.	55.	84.	109.	123.	129.	113.	87.	62.	38.	23.	73.
EAST	35.	52.	79.	103.	127.	138.	149.	135.	109.	81.	50.	34.	91.
SOUTHEAST	68.	83.	99.	112.	127.	135.	150.	145.	129.	109.	75.	63.	108.
HORIZ.	46.	73.	109.	145.	182.	196.	209.	181.	141.	101.	59.	42.	124.

LOCATION BLUE HILL, MASS.

LATITUDE 42 DEGREES 13 MINUTES

MONTH	1	HO	1308.	TO0	28.	TOT	24.	HOURLY SOLAR RADIATION										KD	.445	.185	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
								4	5	6	7	8	9	10	11	12	13					14	15	16	17
ORIENTATION																									

MONTH	2	HO	1885.	T00	28.	T0T	24.	HOURLY SOLAR RADIATION										KD	.458	.186			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
																		SAT6S	SAT6S	SAT6S	SAT6S		
SOUTH	0.	0.	0.	9.	59.	96.	124.	141.	146.	141.	124.	96.	59.	9.	0.	0.	0.	1003.	100.	159.	56.	83.	
SOUTHWEST	0.	0.	0.	3.	14.	24.	52.	86.	115.	134.	142.	134.	103.	21.	0.	0.	0.	829.	88.	136.	51.	72.	
WEST	0.	0.	0.	3.	14.	24.	32.	37.	39.	71.	96.	107.	95.	22.	0.	0.	0.	542.	67.	99.	41.	56.	
NORTHWEST	0.	0.	0.	3.	14.	24.	32.	37.	39.	37.	32.	32.	40.	12.	0.	0.	0.	301.	50.	68.	34.	42.	
NORTH	0.	0.	0.	3.	14.	24.	32.	37.	39.	37.	32.	24.	14.	3.	0.	0.	0.	262.	47.	62.	33.	39.	
NORTHEAST	0.	0.	0.	12.	40.	32.	32.	37.	39.	37.	32.	24.	14.	3.	0.	0.	0.	305.	50.	68.	34.	42.	
EAST	0.	0.	0.	22.	95.	107.	96.	71.	39.	37.	32.	24.	14.	3.	0.	0.	0.	542.	67.	99.	41.	56.	
SOUTHEAST	0.	0.	0.	21.	103.	134.	142.	134.	115.	86.	52.	24.	14.	3.	0.	0.	0.	829.	88.	136.	51.	72.	
HORIZ.	0.	0.	0.	7.	43.	80.	109.	127.	133.	127.	109.	80.	43.	7.	0.	0.	0.	863.	90.	141.	52.	74.	

MONTH	3	HO	2536.	T00	37.	TOT	33.	HOURLY SOLAR RADIATION										KD	.477	.187			
ORIENTATION																							
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
																		SAT6S	SAT6S	SAT6S	SAT6S		
SOUTH	0.	0.	0.	25.	61.	94.	120.	136.	142.	136.	120.	94.	61.	25.	0.	0.	0.	1014.	102.	155.	66.	92.	
SOUTHWEST	0.	0.	0.	11.	23.	33.	48.	84.	114.	136.	145.	141.	120.	74.	0.	0.	0.	931.	96.	145.	63.	87.	
WEST	0.	0.	0.	11.	23.	33.	41.	46.	48.	82.	109.	125.	122.	87.	0.	0.	0.	728.	83.	121.	57.	76.	
NORTHWEST	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	55.	66.	55.	0.	0.	0.	466.	67.	91.	48.	60.	
NORTH	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.	357.	60.	78.	45.	54.	
NORTHEAST	0.	0.	0.	55.	66.	55.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.	466.	67.	91.	48.	60.	
EAST	0.	0.	0.	87.	122.	125.	109.	82.	48.	46.	41.	33.	23.	11.	0.	0.	0.	728.	83.	121.	57.	76.	
SOUTHEAST	0.	0.	0.	74.	120.	141.	145.	136.	114.	84.	48.	33.	23.	11.	0.	0.	0.	931.	96.	145.	63.	87.	
HORIZ.	0.	0.	0.	32.	74.	112.	142.	161.	167.	161.	142.	112.	74.	32.	0.	0.	0.	1208.	114.	177.	72.	104.	



LOCATION	BLUE HILL, MASS.	LATITUDE	42 DEGREES	13 MINUTES																	
MONTH	4	HO	3189.	TOD	47.	TOT	44.	KT	.464	KD	.186										
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGD	
SOUTH	0.	0.	7.	21.	50.	79.	101.	116.	121.	116.	101.	79.	50.	21.	7.	0.	0.	869.	97.	137.	
SOUTHWEST	0.	0.	7.	19.	30.	40.	47.	73.	101.	121.	130.	128.	113.	83.	34.	0.	0.	927.	100.	143.	
WEST	0.	0.	7.	19.	30.	40.	47.	52.	54.	86.	111.	126.	127.	108.	51.	0.	0.	858.	96.	136.	
NORTHWEST	0.	0.	7.	19.	30.	40.	47.	52.	54.	52.	54.	73.	85.	81.	43.	0.	0.	638.	83.	113.	
NORTH	0.	0.	14.	19.	30.	40.	47.	52.	54.	52.	47.	40.	30.	19.	14.	0.	0.	459.	73.	95.	
NORTHEAST	0.	0.	43.	81.	85.	73.	54.	52.	54.	52.	47.	40.	30.	19.	7.	0.	0.	638.	83.	113.	
EAST	0.	0.	51.	108.	127.	126.	111.	86.	54.	52.	47.	40.	30.	19.	7.	0.	0.	858.	96.	136.	
SOUTHEAST	0.	0.	34.	83.	113.	128.	130.	121.	101.	73.	47.	40.	30.	19.	7.	0.	0.	927.	100.	143.	
HORIZ.	0.	0.	18.	57.	98.	134.	162.	179.	185.	179.	162.	134.	98.	57.	18.	0.	0.	1481.	132.	201.	

MONTH	5	HO	3611.	TOD	58.	TOT	56.	KT	.501	KD	.188											
ORIENTATION	4	5	6	7	8	9	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
							10	11	12	13	14	15	16	17	18	19		20	SATGD	SATGD	SATGD	SATGD
SOUTH	0.	3.	13.	25.	43.	72.	94.	109.	114.	109.	94.	72.	43.	25.	13.	3.	0.	832.	105.	141.	84.	106.
SOUTHWEST	0.	3.	13.	25.	36.	45.	53.	69.	98.	119.	130.	129.	116.	90.	51.	4.	0.	981.	114.	156.	90.	115.
WEST	0.	3.	13.	25.	36.	45.	53.	57.	59.	93.	120.	138.	142.	128.	87.	7.	0.	1004.	115.	158.	90.	117.
NORTHWEST	0.	3.	13.	25.	36.	45.	53.	57.	59.	57.	71.	92.	105.	105.	80.	7.	0.	806.	104.	139.	84.	105.
NORTH	0.	4.	33.	35.	36.	45.	53.	57.	59.	57.	53.	45.	36.	35.	33.	4.	0.	586.	91.	117.	76.	91.
NORTHEAST	0.	7.	80.	105.	105.	92.	71.	57.	59.	57.	53.	45.	36.	25.	13.	3.	0.	806.	104.	139.	84.	105.
EAST	0.	7.	87.	128.	142.	138.	120.	93.	59.	57.	53.	45.	36.	25.	13.	3.	0.	1004.	115.	158.	90.	117.
SOUTHEAST	0.	4.	51.	90.	116.	129.	130.	119.	98.	69.	53.	45.	36.	25.	13.	3.	0.	981.	114.	156.	90.	115.
HORIZ.	0.	4.	37.	80.	123.	160.	188.	206.	212.	206.	188.	160.	123.	80.	37.	4.	0.	1809.	160.	238.	118.	165.

MONTH	6	HO	3765.	TOD	67.	TOT	65.	KT	.516	KD	.186											
ORIENTATION																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGD		SAG/ALL DAY SATGD	
<hr/>																						
SOUTH	0.	5.	15.	27.	39.	67.	90.	105.	110.	105.	90.	67.	39.	27.	15.	5.	0.	806.	111.	145.	93.	114.
SOUTHWEST	0.	5.	15.	27.	37.	47.	54.	65.	95.	117.	129.	129.	116.	91.	55.	11.	0.	993.	121.	163.	99.	125.
WEST	0.	5.	15.	27.	37.	47.	54.	58.	60.	95.	124.	142.	147.	135.	98.	23.	0.	1065.	125.	170.	102.	130.
NORTHWEST	0.	5.	15.	27.	37.	47.	54.	58.	60.	58.	77.	99.	114.	115.	92.	24.	0.	882.	115.	152.	96.	119.
NORTH	0.	14.	42.	43.	37.	47.	54.	58.	60.	58.	54.	47.	37.	43.	42.	14.	0.	649.	103.	130.	88.	105.
NORTHEAST	0.	24.	92.	115.	114.	99.	77.	58.	60.	58.	54.	47.	37.	27.	15.	5.	0.	882.	115.	152.	96.	119.
EAST	0.	23.	98.	135.	147.	142.	124.	95.	60.	58.	54.	47.	37.	27.	15.	5.	0.	1065.	125.	170.	102.	130.
SOUTHEAST	0.	11.	55.	91.	116.	129.	129.	117.	95.	65.	54.	47.	37.	27.	15.	5.	0.	993.	121.	163.	99.	125.
HORIZ.	0.	9.	45.	89.	132.	169.	198.	217.	223.	217.	198.	169.	132.	89.	45.	9.	0.	1943.	173.	254.	132.	183.

LOCATION		BLUE HILL, MASS.		LATITUDE		42 DEGREES		13 MINUTES																	
MONTH	7	HO	3609.	TOD	72.	TOT	70.	KT	.513	KD	.186														
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SAT6S SAT6D		SAG/ALL DAY SAT6S SAT6D		
SOUTH	0.	3.	13.	25.	43.	72.	96.	111.	116.	111.	96.	72.	43.	25.	13.	3.	0.	0.	843.	120.	156.	99.	121.		
SOUTHWEST	0.	3.	13.	25.	36.	45.	53.	69.	99.	122.	133.	133.	119.	92.	52.	4.	0.	0.	997.	128.	171.	104.	130.		
WEST	0.	3.	13.	25.	36.	45.	53.	57.	59.	95.	123.	142.	146.	131.	88.	7.	0.	0.	1021.	130.	174.	105.	132.		
NORTHWEST	0.	3.	13.	25.	36.	45.	53.	57.	59.	57.	72.	94.	108.	108.	81.	7.	0.	0.	817.	118.	153.	98.	120.		
NORTH	0.	5.	34.	36.	36.	45.	53.	57.	59.	57.	53.	45.	36.	36.	34.	5.	0.	0.	589.	105.	131.	90.	106.		
NORTHEAST	0.	7.	81.	108.	108.	94.	72.	57.	59.	57.	53.	45.	36.	25.	13.	3.	0.	0.	817.	118.	153.	98.	120.		
EAST	0.	7.	88.	131.	146.	142.	123.	95.	59.	57.	53.	45.	36.	25.	13.	3.	0.	0.	1021.	130.	174.	105.	132.		
SOUTHEAST	0.	4.	52.	92.	119.	133.	122.	99.	69.	53.	45.	36.	25.	13.	3.	0.	0.	0.	997.	128.	171.	104.	130.		
HORIZ.	0.	5.	37^	82.	125.	163.	193.	212.	218.	212.	193.	163.	125.	82.	37.	5.	0.	0.	1852.	176.	256.	134.	182.		
MONTH	8	HO	3167.	TOD	71.	TOT	68.	KT	.495	KD	.188														
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SAT6S SAT6D		SAG/ALL DAY SAT6S SAT6D		
SOUTH	0.	0.	7.	21.	52.	83.	108.	123.	129.	123.	108.	83.	52.	21.	7.	0.	0.	0.	918.	126.	169.	99.	124.		
SOUTHWEST	0.	0.	7.	19.	31.	41.	48.	77.	107.	129.	140.	137.	121.	88.	33.	0.	0.	0.	978.	130.	176.	102.	127.		
WEST	0.	0.	7.	19.	31.	41.	48.	53.	55.	90.	118.	135.	136.	114.	51.	0.	0.	0.	899.	125.	167.	99.	122.		
NORTHWEST	0.	0.	7.	19.	31.	41.	48.	53.	55.	53.	56.	77.	90.	85.	43.	0.	0.	0.	659.	111.	141.	91.	108.		
NORTH	0.	0.	14.	19.	31.	41.	48.	53.	55.	53.	48.	41.	31.	19.	14.	0.	0.	0.	468.	99.	121.	84.	96.		
NORTHEAST	0.	0.	43.	85.	90.	77.	56.	53.	55.	53.	48.	41.	31.	19.	7.	0.	0.	0.	659.	111.	141.	91.	108.		
EAST	0.	0.	51.	114.	136.	135.	118.	90.	55.	53.	48.	41.	31.	19.	7.	0.	0.	0.	899.	125.	167.	99.	122.		
SOUTHEAST	0.	0.	33.	88.	121.	137.	140.	129.	107.	77.	48.	41.	31.	19.	7.	0.	0.	0.	978.	130.	176.	102.	127.		
HORIZ.	0.	0.	18.	60.	103.	142.	172.	191.	197.	191.	172.	142.	103.	60.	18.	0.	0.	0.	1568.	166.	239.	122.	163.		
MONTH	9	HO	2526.	TOD	64.	TOT	61.	KT	.492	KD	.188														
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SAT6S SAT6D		SAG/ALL DAY SAT6S SAT6D		
SOUTH	0.	0.	0.	24.	62.	96.	123.	140.	146.	140.	123.	96.	62.	24.	0.	0.	0.	0.	1038.	135.	189.	97.	124.		
SOUTHWEST	0.	0.	0.	11.	23.	33.	49.	86.	118.	140.	150.	145.	122.	73.	0.	0.	0.	0.	950.	129.	178.	94.	119.		
WEST	0.	0.	0.	11.	23.	33.	41.	46.	48.	84.	113.	128.	125.	86.	0.	0.	0.	0.	740.	115.	153.	86.	106.		
NORTHWEST	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	56.	68.	55.	0.	0.	0.	0.	471.	96.	121.	77.	90.		
NORTH	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.	0.	360.	89.	107.	73.	83.		
NORTHEAST	0.	0.	0.	55.	68.	56.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.	0.	471.	96.	121.	77.	90.		
EAST	0.	0.	86.	125.	128.	113.	84.	48.	46.	41.	33.	23.	11.	0.	0.	0.	0.	0.	740.	115.	153.	86.	106.		
SOUTHEAST	0.	0.	0.	73.	122.	145.	150.	140.	118.	86.	49.	33.	23.	11.	0.	0.	0.	0.	950.	129.	178.	94.	119.		
HORIZ.	0.	0.	1.	32.	75.	115.	146.	166.	172.	166.	146.	115.	75.	32.	1.	0.	0.	0.	1241.	149.	213.	104.	136.		

LOCATION		BLUE HILL, MASS.		LATITUDE		42 DEGREES		13 MINUTES			
MONTH	10	HO	1851.	TOD	54.	TOT	51.	KT	.472	KD	.187
ORIENTATION											
	4	5	6	7	8	9	10	11	12	13	14
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

MONTH 11		HO 1296.		TOD 43.		TOT 40.		KT 406		KD .183														
ORIENTATION																								
4		5	6	7	8	9	10	11	12	13	14													
0.		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.													
SOUTH		0.	0.	0.	32.	78.	107.	124.	130.	124.	107.	78.	32.	0.	0.	0.	0.	0.	0.	811.	110.	164.	66.	87.
SOUTHWEST		0.	0.	0.	0.	0.	6.	18.	47.	76.	100.	115.	117.	101.	50.	0.	0.	0.	0.	632.	95.	137.	60.	76.
WEST		0.	0.	0.	0.	0.	0.	6.	15.	23.	27.	29.	54.	72.	75.	43.	0.	0.	0.	344.	71.	94.	51.	60.
NORTHWEST		0.	0.	0.	0.	0.	0.	6.	15.	23.	27.	29.	27.	23.	15.	14.	0.	0.	0.	180.	58.	70.	45.	50.
NORTH		0.	0.	0.	0.	0.	0.	6.	15.	23.	27.	29.	27.	23.	15.	6.	0.	0.	0.	172.	57.	69.	45.	50.
NORTHEAST		0.	0.	0.	0.	0.	0.	14.	15.	23.	27.	29.	27.	23.	15.	6.	0.	0.	0.	180.	58.	70.	45.	50.
EAST		0.	0.	0.	0.	0.	0.	43.	75.	72.	54.	29.	27.	23.	15.	6.	0.	0.	0.	344.	71.	94.	51.	60.
SOUTHEAST		0.	0.	0.	0.	0.	0.	50.	101.	117.	115.	100.	76.	47.	18.	6.	0.	0.	0.	632.	05.	137.	60.	76.
HORIZ.		0.	0.	0.	0.	0.	0.	15.	45.	70.	87.	92.	87.	70.	45.	15.	0.	0.	0.	527.	86.	121.	57.	70.

MONTH 12		HO 1091.		TOD 31.		TOT 27.		KT .436		KD .185						
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HOURLY SOLAR RADIATION																
0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

LOCATION BLUE HILL, MASS. LATITUDE 42 DEGREES 13 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	104.	100.	102.	97.	105.	111.	120.	126.	135.	129.	110.	106.	112.
SOUTHWEST	87.	88.	96.	100.	114.	121.	128.	130.	129.	115.	95.	88.	108.
WEST	60.	67.	83.	96.	115.	125.	130.	125.	115.	95.	71.	59.	95.
NORTHWEST	44.	50.	67.	83.	104.	115.	118.	111.	96.	76.	58.	45.	81.
NORTH	43.	47.	60.	73.	91.	103.	105.	99.	89.	73.	57.	44.	74.
NORTHEAST	44.	50.	67.	83.	104.	115.	118.	111.	96.	76.	58.	45.	81.
EAST	60.	67.	83.	96.	115.	125.	130.	125.	115.	93.	71.	59.	95.
SOUTHEAST	87.	88.	96.	100.	114.	121.	128.	130.	129.	115.	95.	88.	108.
HORIZ.	76.	90.	114.	132.	160.	173.	176.	166.	149.	117.	86.	73.	126.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	166.	159.	155.	137.	141.	145.	156.	169.	189.	189.	164.	167.	161.
SOUTHWEST	135.	136.	145.	143.	156.	163.	171.	176.	178.	165.	137.	134.	153.
WEST	85.	99.	121.	136.	158.	170.	174.	167.	153.	125.	94.	81.	130.
NORTHWEST	56.	68.	91.	113.	139.	152.	153.	141.	121.	93.	70.	55.	104.
NORTH	55.	62.	78.	95.	117.	130.	131.	121.	107.	88.	69.	55.	92.
NORTHEAST	56.	68.	91.	113.	139.	152.	153.	141.	121.	93.	70.	55.	104.
EAST	85.	99.	121.	136.	158.	170.	174.	167.	153.	125.	94.	81.	130.
SOUTHEAST	135.	136.	145.	143.	156.	163.	171.	176.	178.	165.	137.	134.	153.
HORIZ.	115.	141.	177.	201.	238.	254.	256.	239.	213.	169.	121.	106.	186.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	54.	56.	66.	72.	84.	93.	99.	99.	97.	84.	66.	55.	77.
SOUTHWEST	47.	51.	63.	74.	90.	99.	104.	102.	94.	78.	60.	48.	76.
WEST	36.	41.	57.	71.	90.	102.	105.	99.	86.	68.	51.	38.	70.
NORTHWEST	30.	34.	48.	64.	84.	96.	98.	91.	77.	60.	45.	32.	63.
NORTH	30.	33.	45.	59.	76.	88.	90.	84.	73.	59.	45.	32.	59.
NORTHEAST	30.	34.	48.	64.	84.	96.	98.	91.	77.	60.	45.	32.	63.
EAST	36.	41.	57.	71.	90.	102.	105.	99.	86.	68.	51.	38.	70.
SOUTHEAST	47.	51.	63.	74.	90.	99.	104.	102.	94.	78.	60.	48.	76.
HORIZ.	43.	52.	72.	91.	118.	132.	134.	122.	104.	79.	57.	43.	87.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	78.	83.	92.	94.	106.	114.	121.	124.	124.	111.	87.	78.	101.
SOUTHWEST	66.	72.	87.	98.	115.	125.	130.	127.	119.	100.	76.	66.	99.
WEST	46.	56.	76.	94.	117.	132.	132.	122.	106.	82.	60.	46.	89.
NORTHWEST	35.	42.	60.	81.	105.	119.	120.	108.	90.	68.	50.	36.	76.
NORTH	34.	39.	54.	71.	91.	105.	106.	96.	83.	66.	50.	36.	69.
NORTHEAST	35.	42.	60.	81.	105.	119.	120.	108.	90.	68.	50.	36.	76.
EAST	46.	56.	76.	94.	117.	130.	132.	122.	106.	82.	60.	46.	89.
SOUTHEAST	66.	72.	87.	98.	115.	125.	130.	127.	119.	100.	76.	66.	99.
HORIZ.	58.	74.	104.	130.	165.	183.	182.	163.	136.	101.	70.	55.	119.



LOCATION BOISE, IDAHO LATITUDE 43 DEGREES 34 MINUTES

MONTH	1	H0	1233.	T00	29.	TOT	27.	KT	.446	KD	.185							
ORIENTATION												DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGN		
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGN
SOUTH	0.	0.	0.	0.	34.	88.	122.	142.	149.	142.	122.	88.	34.	0.	0.	0.	106.	168.
SOUTHWEST	0.	0.	0.	0.	6.	18.	52.	86.	113.	131.	134.	116.	54.	0.	0.	0.	88.	136.
WEST	0.	0.	0.	0.	6.	15.	22.	27.	29.	29.	81.	84.	46.	0.	0.	0.	60.	85.
NORTHWEST	0.	0.	0.	0.	6.	15.	22.	27.	29.	27.	22.	15.	14.	0.	0.	0.	44.	56.
NORTH	0.	0.	0.	0.	6.	15.	22.	27.	29.	27.	22.	15.	6.	0.	0.	0.	44.	55.
NORTHEAST	0.	0.	0.	0.	14.	15.	22.	27.	29.	27.	22.	15.	6.	0.	0.	0.	44.	56.
EAST	0.	0.	0.	0.	46.	84.	81.	59.	29.	27.	22.	15.	6.	0.	0.	0.	60.	85.
SOUTHEAST	0.	0.	0.	0.	54.	116.	134.	131.	113.	86.	52.	18.	6.	0.	0.	0.	88.	136.
HORIZ.	0.	0.	0.	0.	14.	47.	74.	92.	98.	92.	74.	47.	14.	0.	0.	0.	75.	112.
												921.	106.	168.	57.	81.		
												709.	88.	136.	50.	69.		
												369.	60.	85.	39.	49.		
												178.	44.	56.	33.	38.		
												170.	44.	55.	33.	37.		
												178.	44.	56.	33.	38.		
												369.	60.	85.	39.	49.		
												709.	88.	136.	50.	69.		
												551.	75.	112.	45.	59.		

MONTH	2	H0	1816.	TOD	36.	TOT	34.	KT	.533	KD	.183						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	9.	70.	118.	152.	173.	181.	173.	152.	118.	70.	9.	0.	0.	0.
SOUTHWEST	0.	0.	0.	3.	14.	25.	59.	103.	139.	165.	175.	165.	126.	20.	0.	0.	0.
WEST	0.	0.	0.	3.	14.	25.	33.	38.	39.	82.	114.	131.	116.	22.	0.	0.	0.
NORTHWEST	0.	0.	0.	3.	14.	25.	33.	38.	39.	38.	33.	34.	46.	12.	0.	0.	0.
NORTH	0.	0.	0.	3.	14.	25.	33.	38.	39.	38.	33.	25.	14.	3.	0.	0.	0.
NORTHEAST	0.	0.	0.	12.	46.	34.	33.	38.	39.	38.	33.	25.	14.	3.	0.	0.	0.
EAST	0.	0.	0.	22.	116.	131.	114.	82.	39.	38.	33.	25.	14.	3.	0.	0.	0.
SOUTHEAST	0.	0.	0.	20.	126.	165.	175.	165.	139.	103.	59.	25.	14.	3.	0.	0.	0.
HORIZ.	0.	0.	0.	6.	47.	89.	123.	144.	151.	144.	123.	89.	47.	6.	0.	0.	0.
																	</

MONTH	3	H0	2483.	TOD	45.	TOT	42.	KT	548	KD								.181	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	HOURLY SOLAR RADIATION				16	17	18	19	20
											14	15	16	17					
SOUTH	0.	0.	0.	28.	72.	113.	144.	164.	171.	164.	144.	113.	72.	28.	0.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	11.	23.	33.	53.	97.	135.	162.	175.	171.	146.	90.	0.	0.	0.	0.	0.
WEST	0.	0.	0.	11.	23.	33.	41.	47.	48.	92.	128.	149.	148.	106.	0.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	11.	23.	33.	41.	47.	48.	47.	41.	59.	77.	66.	0.	0.	0.	0.	0.
NORTH	0.	0.	0.	11.	23.	33.	41.	47.	48.	47.	41.	33.	23.	11.	0.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	66.	77.	59.	41.	47.	48.	47.	41.	33.	23.	11.	0.	0.	0.	0.	0.
EAST	0.	0.	0.	106.	148.	149.	128.	92.	48.	47.	41.	33.	23.	11.	0.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	90.	146.	171.	175.	162.	135.	97.	53.	33.	23.	11.	0.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	34.	83.	126.	160.	182.	189.	182.	160.	126.	83.	34.	0.	0.	0.	0.	0.



LOCATION	BOISE, IDAHO	LATITUDE 43 DEGREES 34 MINUTES									
MONTH	7	H0	3601.	T00	80.	T0T	75.	KT	.684	KD	.153
ORIENTATION											
4	5	6	7	8	9	10	11	12	13	14	15
HOURLY SOLAR RADIATION											
0.	3.	13.	24.	51.	94.	128.	151.	158.	151.	128.	94.
SOUTH											
SOUTHWEST	0.	3.	13.	24.	36.	45.	53.	80.	129.	166.	188.
WEST	0.	3.	13.	24.	36.	45.	53.	58.	59.	118.	168.
NORTHWEST	0.	3.	13.	24.	36.	45.	53.	58.	59.	81.	122.
NORTH	0.	8.	46.	41.	36.	45.	53.	58.	59.	53.	45.
NORTHEAST	0.	15.	125.	159.	151.	122.	81.	58.	59.	58.	53.
EAST	0.	14.	138.	198.	215.	202.	168.	118.	166.	129.	80.
SOUTHEAST	0.	7.	77.	136.	173.	190.	188.	166.	129.	80.	53.
HORIZ.	0.	5.	48.	107.	166.	218.	258.	283.	292.	283.	258.
DAILY TOTAL RADIATION											
1085.											
1321.											
1345.											
1002.											
633.											
115.											
135.											
1002.											
1345.											
1321.											
2463.											
SAG/DAYTIME SAGS SATGD											
140.											
153.											
154.											
135.											
115.											
135.											
154.											
153.											
216.											
SAG/ALL DAY SAGS SATGD											
112.											
120.											
121.											
109.											
96.											
109.											
121.											
120.											
321.											
159.											
224.											
MONTH 8											
H0	3137.	T00	77.	T0T	72.	KT	.660	KD	.159		
ORIENTATION											
4	5	6	7	8	9	10	11	12	13	14	15
HOURLY SOLAR RADIATION											
0.	7.	23.	68.	113.	150.	173.	181.	173.	150.	113.	68.
SOUTH											
SOUTHWEST	0.	7.	19.	31.	41.	49.	96.	144.	181.	201.	179.
WEST	0.	7.	19.	31.	41.	49.	54.	56.	114.	163.	195.
NORTHWEST	0.	7.	19.	31.	41.	49.	54.	56.	54.	58.	99.
NORTH	0.	18.	19.	31.	41.	49.	54.	56.	54.	49.	41.
NORTHEAST	0.	67.	126.	126.	99.	58.	54.	56.	54.	49.	41.
EAST	0.	81.	174.	203.	195.	163.	114.	56.	54.	49.	41.
SOUTHEAST	0.	51.	132.	179.	201.	201.	181.	144.	96.	49.	41.
HORIZ.	0.	21.	76.	135.	188.	229.	255.	263.	255.	229.	188.
DAILY TOTAL RADIATION											
1250.											
1331.											
1186.											
786.											
479.											
786.											
1186.											
1331.											
2071.											
SAG/DAYTIME SAGS SATGD											
153.											
158.											
149.											
125.											
106.											
125.											
149.											
158.											
203.											
SAG/ALL DAY SAGS SATGD											
115.											
118.											
113.											
99.											
128.											
161.											
125.											
204.											
220.											
299.											
MONTH 9											
H0	2473.	T00	67.	T0T	62.	KT	.656	KD	.160		
ORIENTATION											
4	5	6	7	8	9	10	11	12	13	14	15
HOURLY SOLAR RADIATION											
0.	32.	87.	138.	179.	204.	213.	204.	179.	138.	87.	32.
SOUTH											
SOUTHWEST	0.	0.	11.	23.	33.	42.	47.	49.	165.	202.	217.
WEST	0.	0.	11.	23.	33.	42.	47.	49.	109.	158.	188.
NORTHWEST	0.	0.	11.	23.	33.	42.	47.	49.	47.	42.	33.
NORTH	0.	0.	11.	23.	33.	42.	47.	49.	47.	42.	33.
NORTHEAST	0.	0.	80.	94.	69.	42.	47.	49.	47.	42.	33.
EAST	0.	0.	130.	188.	188.	158.	109.	49.	47.	42.	33.
SOUTHEAST	0.	0.	110.	185.	217.	221.	202.	165.	114.	56.	33.
HORIZ.	0.	1.	38.	96.	150.	192.	219.	228.	219.	192.	150.
DAILY TOTAL RADIATION											
1493.											
1337.											
977.											
535.											
359.											
535.											
977.											
1337.											
1622.											
SAG/DAYTIME SAGS SATGD											
168.											
158.											
133.											
103.											
91.											
103.											
133.											
158.											
177.											
SAG/ALL DAY SAGS SATGD											
113.											
108.											
96.											
81.											
75.											
81.											
96.											
121.											
108.											
118.											

LOCATION		BOISE, IDAHO		LATITUDE		43 DEGREES		34 MINUTES										
MONTH	10	H0	1783.	T00	56.	T0T	53.	KT	.588	KD	.176							
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		HOURLY SOLAR RADIATION																
SOUTH		0.	0.	0.	7.	77.	133.	174.	199.	207.	199.	174.	133.	77.	7.	0.	0.	0.
SOUTHWEST		0.	0.	0.	3.	14.	24.	64.	115.	158.	185.	200.	185.	135.	16.	0.	0.	0.
WEST		0.	0.	0.	3.	14.	24.	33.	38.	40.	90.	129.	147.	128.	17.	0.	0.	0.
NORTHWEST		0.	0.	0.	3.	14.	24.	33.	38.	40.	38.	33.	34.	49.	9.	0.	0.	0.
NORTH		0.	0.	0.	3.	14.	24.	33.	38.	40.	38.	33.	24.	14.	3.	0.	0.	0.
NORTHEAST		0.	0.	0.	9.	49.	34.	33.	38.	40.	38.	33.	24.	14.	3.	0.	0.	0.
EAST		0.	0.	0.	17.	128.	147.	129.	90.	40.	38.	33.	24.	14.	3.	0.	0.	0.
SOUTHEAST		0.	0.	0.	16.	139.	188.	200.	188.	158.	115.	64.	24.	14.	3.	0.	0.	0.
HORIZ.		0.	0.	0.	5.	48.	96.	134.	158.	166.	158.	134.	96.	48.	5.	0.	0.	0.
DAILY TOTAL RADIATION		1387.																
SAG/DAYTIME SATGS		157.																
SAG/ALL DAY SATGS		239.																
SOUTH		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTHWEST		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
WEST		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTHWEST		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTH		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTHEAST		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
EAST		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTHEAST		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
HORIZ.		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
DAILY TOTAL RADIATION		1387.																
SAG/DAYTIME SATGS		157.																
SAG/ALL DAY SATGS		239.																



## LOCATION BOISE, IDAHO

LATITUDE 43 DEGREES 34 MINUTES

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	106.	125.	123.	118.	118.	121.	140.	153.	168.	157.	129.	109.	131.
SOUTHWEST	88.	108.	115.	122.	130.	134.	153.	158.	158.	137.	109.	90.	125.
WEST	60.	81.	98.	115.	131.	139.	154.	149.	133.	104.	76.	59.	108.
NORTHWEST	44.	59.	77.	96.	114.	125.	135.	125.	103.	79.	58.	46.	88.
NORTH	44.	56.	68.	81.	97.	107.	115.	106.	91.	75.	45.	78.	78.
NORTHEAST	44.	59.	77.	96.	114.	125.	135.	125.	103.	79.	58.	46.	88.
EAST	60.	81.	98.	115.	131.	139.	154.	149.	133.	104.	76.	59.	108.
SOUTHEAST	88.	108.	115.	122.	130.	134.	153.	158.	158.	137.	109.	90.	125.
HORIZ.	75.	106.	132.	160.	186.	197.	216.	203.	177.	132.	92.	73.	146.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	168.	197.	186.	171.	162.	160.	186.	211.	246.	239.	200.	170.	191.
SOUTHWEST	136.	167.	172.	178.	181.	184.	209.	220.	227.	203.	163.	137.	182.
WEST	85.	117.	141.	166.	183.	192.	212.	204.	184.	143.	103.	81.	151.
NORTHWEST	56.	78.	102.	131.	154.	167.	178.	161.	131.	98.	70.	56.	115.
NORTH	55.	71.	87.	104.	123.	136.	142.	128.	110.	91.	69.	55.	98.
NORTHEAST	56.	78.	102.	131.	154.	167.	178.	161.	131.	98.	70.	56.	115.
EAST	85.	117.	141.	166.	183.	192.	212.	204.	184.	143.	103.	81.	151.
SOUTHEAST	136.	167.	172.	178.	181.	184.	209.	220.	227.	203.	163.	137.	182.
HORIZ.	112.	164.	203.	247.	281.	295.	321.	299.	261.	194.	133.	105.	218.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	57.	73.	81.	86.	93.	98.	112.	115.	113.	97.	73.	59.	88.
SOUTHWEST	50.	66.	77.	89.	100.	106.	120.	118.	108.	88.	65.	52.	87.
WEST	39.	54.	68.	85.	100.	109.	121.	113.	96.	74.	53.	41.	79.
NORTHWEST	33.	44.	58.	74.	90.	100.	109.	99.	81.	63.	46.	36.	69.
NORTH	33.	42.	53.	65.	79.	89.	96.	89.	75.	61.	45.	35.	64.
NORTHEAST	33.	44.	58.	74.	90.	100.	109.	99.	81.	63.	46.	36.	69.
EAST	39.	54.	68.	85.	100.	109.	121.	113.	96.	74.	53.	41.	79.
SOUTHEAST	50.	66.	77.	89.	100.	106.	120.	118.	108.	88.	65.	52.	87.
HORIZ.	45.	65.	85.	110.	134.	146.	159.	143.	118.	86.	59.	45.	100.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	81.	105.	112.	116.	119.	123.	140.	148.	153.	133.	101.	81.	118.
SOUTHWEST	69.	92.	106.	120.	131.	138.	155.	153.	143.	117.	86.	69.	115.
WEST	49.	70.	90.	113.	133.	143.	156.	144.	121.	91.	63.	48.	102.
NORTHWEST	38.	52.	71.	94.	115.	127.	135.	120.	95.	71.	50.	39.	84.
NORTH	37.	49.	63.	78.	96.	108.	113.	101.	84.	68.	50.	39.	74.
NORTHEAST	38.	52.	71.	94.	115.	127.	135.	120.	95.	71.	50.	39.	84.
EAST	49.	70.	90.	113.	133.	143.	156.	144.	121.	91.	63.	48.	102.
SOUTHEAST	69.	92.	106.	120.	131.	138.	155.	153.	143.	117.	86.	69.	115.
HORIZ.	59.	90.	121.	159.	193.	209.	224.	198.	160.	114.	75.	57.	138.

LOCATION	BOSTON, MASSACHUSETTS										LATITUDE		42 DEGREES		21 MINUTES							
MONTH	1	HO	1299.	TOD	31.	TOT	29.	KT	.410	KD	.183											
ORIENTATION	HOURLY SOLAR RADIATION																					
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				
	SAG/DAYTIME SATGS SATGD																					
SOUTH	0.	0.	0.	0.	34.	80.	109.	126.	131.	126.	109.	80.	34.	0.	0.	0.	0.	827.	99.	154.	56.	77.
SOUTHWEST	0.	0.	0.	0.	7.	18.	48.	77.	101.	117.	119.	104.	53.	0.	0.	0.	0.	644.	84.	127.	50.	67.
WEST	0.	0.	0.	0.	7.	16.	23.	27.	29.	55.	73.	77.	45.	0.	0.	0.	0.	351.	60.	83.	40.	50.
NORTHWEST	0.	0.	0.	0.	7.	16.	23.	27.	29.	27.	23.	16.	15.	0.	0.	0.	0.	181.	46.	58.	35.	40.
NORTH	0.	0.	0.	0.	7.	16.	23.	27.	29.	27.	23.	16.	7.	0.	0.	0.	0.	173.	46.	57.	35.	39.
NORTHEAST	0.	0.	0.	0.	15.	16.	23.	27.	29.	27.	23.	16.	7.	0.	0.	0.	0.	181.	46.	58.	35.	40.
EAST	0.	0.	0.	0.	45.	77.	73.	55.	29.	27.	23.	16.	7.	0.	0.	0.	0.	351.	60.	83.	40.	50.
SOUTHEAST	0.	0.	0.	0.	53.	104.	119.	117.	101.	77.	48.	18.	7.	0.	0.	0.	0.	644.	84.	127.	50.	67.
HORIZ.	0.	0.	0.	0.	16.	46.	71.	87.	93.	87.	71.	46.	16.	0.	0.	0.	0.	534.	75.	110.	46.	60.

MONTH	2	HO	1877.	TOD	31.	TOT	29.	KT	.426	KD	.184											
ORIENTATION	HOURLY SOLAR RADIATION																					
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				
	SAG/DAYTIME SATGS SATGD																					
SOUTH	0.	0.	0.	9.	53.	87.	113.	128.	133.	128.	113.	87.	53.	9.	0.	0.	0.	913.	97.	151.	58.	82.
SOUTHWEST	0.	0.	0.	3.	14.	24.	49.	80.	105.	122.	129.	121.	92.	19.	0.	0.	0.	757.	86.	130.	53.	73.
WEST	0.	0.	0.	3.	14.	24.	31.	36.	37.	66.	88.	97.	86.	20.	0.	0.	0.	502.	67.	97.	45.	58.
NORTHWEST	0.	0.	0.	3.	14.	24.	31.	36.	37.	36.	31.	31.	37.	11.	0.	0.	0.	291.	52.	69.	39.	46.
NORTH	0.	0.	0.	3.	14.	24.	31.	36.	37.	36.	31.	24.	14.	3.	0.	0.	0.	253.	50.	65.	37.	44.
NORTHEAST	0.	0.	0.	11.	37.	51.	31.	36.	37.	36.	31.	24.	14.	3.	0.	0.	0.	291.	52.	69.	39.	46.
EAST	0.	0.	0.	20.	86.	97.	88.	66.	37.	36.	31.	24.	14.	3.	0.	0.	0.	502.	67.	97.	45.	58.
SOUTHEAST	0.	0.	0.	19.	92.	121.	129.	122.	105.	80.	49.	24.	14.	3.	0.	0.	0.	757.	86.	130.	53.	73.
HORIZ.	0.	0.	0.	7.	40.	74.	100.	117.	123.	117.	100.	74.	40.	7.	0.	0.	0.	800.	89.	136.	55.	76.

MONTH	3	HO	2531.	TOD	40.	TOT	38.	KT	.445	KD	.185											
ORIENTATION	HOURLY SOLAR RADIATION																					
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				
	SAG/DAYTIME SATGS SATGD																					
SOUTH	0.	0.	0.	23.	56.	87.	111.	126.	131.	126.	111.	87.	56.	23.	0.	0.	0.	936.	100.	149.	68.	92.
SOUTHWEST	0.	0.	0.	11.	22.	32.	47.	79.	106.	125.	133.	129.	109.	67.	0.	0.	0.	861.	95.	140.	65.	88.
WEST	0.	0.	0.	11.	22.	32.	40.	44.	46.	77.	101.	114.	111.	79.	0.	0.	0.	678.	83.	119.	59.	77.
NORTHWEST	0.	0.	0.	11.	22.	32.	40.	44.	46.	44.	40.	51.	61.	50.	0.	0.	0.	443.	68.	91.	52.	63.
NORTH	0.	0.	0.	11.	22.	32.	40.	44.	46.	44.	40.	32.	22.	11.	0.	0.	0.	346.	62.	80.	49.	58.
NORTHEAST	0.	0.	0.	50.	61.	51.	40.	44.	46.	44.	40.	32.	22.	11.	0.	0.	0.	443.	68.	91.	52.	63.
EAST	0.	0.	0.	79.	111.	114.	101.	77.	46.	44.	40.	32.	22.	11.	0.	0.	0.	678.	83.	119.	59.	77.
SOUTHEAST	0.	0.	0.	67.	109.	129.	133.	125.	106.	79.	47.	32.	22.	11.	0.	0.	0.	861.	95.	140.	65.	88.
HORIZ.	0.	0.	0.	30.	69.	104.	132.	149.	155.	149.	132.	104.	69.	30.	0.	0.	0.	1124.	112.	170.	74.	103.

LOCATION BOSTON, MASSACHUSETTS LATITUDE 42 DEGRFES 21 MINUTES

MONTH	4	HO	3186.	TOD	49.	TOT	47.	KT	.438	KD	.185						
HOURLY SOLAR RADIATION																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	7.	20.	48.	74.	95.	109.	114.	109.	95.	74.	48.	20.	7.	0.	0.
SOUTHWEST	0.	0.	7.	19.	29.	39.	46.	70.	96.	113.	122.	119.	105.	77.	31.	0.	0.
WEST	0.	0.	7.	19.	29.	39.	46.	51.	52.	81.	104.	117.	118.	100.	47.	0.	0.
NORTHWEST	0.	0.	7.	19.	29.	39.	46.	51.	52.	51.	52.	69.	79.	75.	40.	0.	0.
NORTH	0.	0.	14.	19.	29.	39.	46.	51.	52.	51.	46.	39.	29.	19.	14.	0.	0.
NORTHEAST	0.	0.	40.	75.	79.	69.	52.	51.	52.	51.	46.	39.	29.	19.	7.	0.	0.
EAST	0.	0.	47.	100.	118.	117.	104.	81.	52.	51.	46.	39.	29.	19.	7.	0.	0.
SOUTHEAST	0.	0.	31.	77.	105.	119.	122.	113.	96.	70.	46.	39.	29.	19.	7.	0.	0.
HORIZ.	0.	0.	17.	54.	93.	126.	152.	169.	174.	169.	152.	126.	93.	54.	17.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS SATGD																	
SAG/ALL DAY SATGS SATGD																	
SAG/ALL DAY SATGS SATGD																	

MONTH	5	HO	3610.	TOD	60.	TOT	58.	KT	.499	KD	.188						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	3.	13.	25.	44.	72.	94.	109.	114.	109.	94.	72.	44.	25.	13.	3.	0.
SOUTHWEST	0.	3.	13.	25.	36.	45.	52.	69.	98.	119.	130.	129.	116.	90.	51.	4.	0.
WEST	0.	3.	13.	25.	36.	45.	52.	57.	59.	93.	120.	137.	141.	127.	87.	7.	0.
NORTHWEST	0.	3.	13.	25.	36.	45.	52.	57.	59.	57.	70.	91.	105.	105.	79.	7.	0.
NORTH	0.	5.	33.	35.	36.	45.	52.	57.	59.	57.	52.	45.	36.	35.	33.	5.	0.
NORTHEAST	0.	7.	79.	105.	105.	91.	70.	57.	59.	57.	52.	45.	36.	25.	13.	3.	0.
EAST	0.	7.	87.	127.	141.	137.	120.	93.	59.	57.	52.	45.	36.	25.	13.	3.	0.
SOUTHEAST	0.	4.	51.	90.	116.	129.	130.	119.	98.	69.	52.	45.	36.	25.	13.	3.	0.
HORIZ.	0.	5.	37.	80.	122.	159.	187.	205.	211.	205.	187.	159.	122.	80.	37.	5.	0.
													</				

MONTH	6	HO	3765.	TOD	70.	TOT	67.	KT	.495	KD	.188						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	5.	15.	26.	39.	66.	88.	102.	106.	102.	88.	66.	39.	26.	15.	5.	0.
SOUTHWEST	0.	5.	15.	26.	37.	46.	53.	64.	93.	113.	123.	123.	111.	87.	52.	11.	0.
WEST	0.	5.	15.	26.	37.	46.	53.	58.	59.	92.	118.	135.	139.	127.	92.	22.	0.
NORTHWEST	0.	5.	15.	26.	37.	46.	53.	58.	59.	58.	75.	95.	108.	108.	87.	23.	0.
NORTH	0.	14.	40.	42.	37.	46.	53.	58.	59.	58.	53.	46.	37.	42.	40.	14.	0.
NORTHEAST	0.	23.	87.	108.	108.	95.	75.	58.	59.	58.	53.	46.	37.	26.	15.	5.	0.
EAST	0.	22.	92.	127.	139.	135.	118.	92.	59.	58.	53.	46.	37.	26.	15.	5.	0.
SOUTHEAST	0.	11.	52.	87.	111.	123.	123.	113.	93.	64.	53.	46.	37.	26.	15.	5.	0.
HORIZ.	0.	9.	44.	86.	127.	162.	190.	207.	213.	207.	190.	162.	127.	86.	44.	9.	0.

LOCATION		BOSTON, MASSACHUSETTS										LATITUDE 42 DEGREES 21 MINUTES															
MONTH	7	H0	3608.	TOD	74.	TOT	72.	KT	.507	KD	.187																
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION			SAG/DAYTIME SATGS SATGD			SAG/ALL DAY SATGS SATGD		
SOUTH		0.	3.	13.	25.	43.	72.	95.	110.	115.	110.	95.	72.	43.	25.	13.	3.	0.	838.	121.	157.	101.	123.	130.	172.	106.	132.
SOUTHWEST		0.	3.	13.	25.	36.	45.	52.	69.	99.	120.	132.	131.	117.	91.	51.	4.	0.	988.	130.	172.	106.	132.	131.	175.	107.	133.
WEST		0.	3.	13.	25.	36.	45.	52.	57.	59.	94.	122.	140.	143.	129.	87.	7.	0.	1011.	131.	175.	107.	133.	131.	175.	107.	133.
NORTHWEST		0.	3.	13.	25.	36.	45.	52.	57.	59.	57.	71.	93.	106.	106.	80.	7.	0.	810.	120.	155.	100.	121.	120.	155.	100.	121.
NORTH		0.	5.	33.	36.	36.	45.	52.	57.	59.	57.	52.	45.	36.	36.	33.	5.	0.	587.	107.	133.	92.	108.	120.	155.	100.	121.
NORTHEAST		0.	7.	80.	106.	106.	93.	71.	57.	59.	57.	52.	45.	36.	25.	13.	3.	0.	810.	120.	155.	100.	121.	120.	155.	100.	121.
EAST		0.	7.	87.	129.	143.	140.	122.	94.	59.	57.	52.	45.	36.	25.	13.	3.	0.	1011.	131.	175.	107.	133.	131.	175.	107.	133.
SOUTHEAST		0.	4.	51.	91.	117.	131.	132.	120.	89.	69.	52.	45.	36.	25.	13.	3.	0.	988.	130.	172.	106.	132.	130.	172.	106.	132.
HORIZ.		0.	5.	37.	81.	124.	161.	190.	209.	215.	209.	190.	161.	124.	81.	37.	5.	0.	1830.	177.	256.	135.	183.	177.	256.	135.	183.
MONTH	8	H0	3164.	TOD	74.	TOT	71.	KT	.480	KD	.187																
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION			SAG/DAYTIME SATGS SATGD			SAG/ALL DAY SATGS SATGD		
SOUTH		0.	0.	7.	21.	51.	81.	104.	120.	125.	120.	104.	81.	51.	21.	7.	0.	0.	893.	128.	170.	102.	125.	131.	176.	104.	129.
SOUTHWEST		0.	0.	7.	19.	30.	40.	48.	75.	104.	125.	135.	132.	116.	84.	32.	0.	0.	948.	131.	176.	104.	129.	127.	168.	101.	124.
WEST		0.	0.	7.	19.	30.	40.	48.	52.	54.	88.	114.	130.	131.	110.	49.	0.	0.	872.	127.	168.	101.	124.	113.	168.	101.	124.
NORTHWEST		0.	0.	7.	19.	30.	40.	48.	52.	54.	52.	55.	75.	87.	82.	41.	0.	0.	643.	113.	143.	93.	110.	113.	143.	93.	110.
NORTH		0.	0.	14.	19.	30.	40.	48.	52.	54.	52.	48.	40.	30.	19.	14.	0.	0.	461.	102.	123.	87.	99.	102.	123.	87.	99.
NORTHEAST		0.	0.	41.	82.	87.	75.	55.	52.	54.	52.	48.	40.	30.	19.	7.	0.	0.	643.	113.	143.	93.	110.	113.	143.	93.	110.
EAST		0.	0.	49.	110.	131.	130.	114.	88.	54.	52.	48.	40.	30.	19.	7.	0.	0.	872.	127.	168.	101.	124.	131.	176.	104.	129.
SOUTHEAST		0.	0.	32.	84.	116.	132.	135.	125.	104.	75.	48.	40.	30.	19.	7.	0.	0.	948.	131.	176.	104.	129.	131.	176.	104.	129.
HORIZ.		0.	0.	17.	58.	100.	137.	166.	185.	191.	185.	166.	137.	100.	58.	17.	0.	0.	1519.	166.	237.	123.	163.	166.	237.	123.	163.
MONTH	9	H0	2520.	TOD	67.	TOT	64.	KT	.477	KD	.187																
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION			SAG/DAYTIME SATGS SATGD			SAG/ALL DAY SATGS SATGD		
SOUTH		0.	0.	0.	23.	60.	93.	119.	136.	141.	136.	119.	93.	60.	23.	0.	0.	0.	1003.	135.	187.	99.	125.	129.	177.	96.	120.
SOUTHWEST		0.	0.	0.	11.	23.	33.	48.	84.	114.	135.	144.	139.	117.	70.	0.	0.	0.	918.	129.	177.	99.	125.	116.	153.	89.	108.
WEST		0.	0.	0.	11.	23.	33.	41.	46.	47.	82.	109.	123.	120.	82.	0.	0.	0.	717.	116.	153.	89.	108.	116.	153.	89.	108.
NORTHWEST		0.	0.	0.	11.	23.	33.	41.	46.	47.	46.	41.	54.	65.	53.	0.	0.	0.	460.	98.	122.	80.	92.	98.	122.	80.	92.
NORTH		0.	0.	0.	11.	23.	33.	41.	46.	47.	46.	41.	33.	23.	11.	0.	0.	0.	354.	91.	109.	76.	86.	91.	109.	76.	86.
NORTHEAST		0.	0.	0.	53.	65.	54.	41.	46.	47.	46.	41.	33.	23.	11.	0.	0.	0.	460.	98.	122.	80.	92.	98.	122.	80.	92.
EAST		0.	0.	0.	82.	120.	123.	109.	82.	47.	46.	41.	33.	23.	11.	0.	0.	0.	717.	116.	153.	89.	108.	116.	153.	89.	108.
SOUTHEAST		0.	0.	0.	70.	117.	139.	144.	135.	114.	84.	48.	33.	23.	11.	0.	0.	0.	918.	129.	177.	96.	120.	129.	177.	96.	120.
HORIZ.		0.	0.	1.	31.	73.	111.	141.	160.	167.	160.	141.	111.	73.	31.	1.	0.	0.	1201.	148.	211.	105.	137.	148.	211.	105.	137.



LOCATION	BOSTON, MASSACHUSETTS				LATITUDE				42 DEGREES				21 MINUTES								
MONTH 10	H0	1844.	T00	57.	TOT	55.	KT	.453	KD	.186											
ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME SATGS		SAG/ALL DAY SATGD	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	7.	56.	94.	122.	139.	145.	139.	122.	94.	56.	7.	0.	0.	0.	978.	128.	186.	86.	112.
SOUTHWEST	0.	0.	3.	14.	24.	51.	85.	113.	133.	139.	130.	97.	15.	0.	0.	0.	804.	115.	163.	81.	102.
WEST	0.	0.	3.	14.	24.	31.	36.	38.	70.	94.	104.	89.	16.	0.	0.	0.	519.	95.	125.	72.	85.
NORTHWEST	0.	0.	3.	14.	24.	31.	36.	38.	36.	31.	31.	38.	9.	0.	0.	0.	292.	78.	96.	64.	72.
NORTH	0.	0.	3.	14.	24.	31.	36.	38.	36.	31.	24.	14.	3.	0.	0.	0.	255.	76.	91.	63.	70.
NORTHEAST	0.	0.	9.	38.	31.	31.	36.	38.	36.	31.	24.	14.	3.	0.	0.	0.	292.	78.	96.	64.	72.
EAST	0.	0.	16.	89.	104.	94.	70.	38.	36.	31.	24.	14.	3.	0.	0.	0.	519.	95.	125.	72.	85.
SOUTHEAST	0.	0.	15.	97.	130.	139.	133.	113.	85.	51.	24.	14.	3.	0.	0.	0.	804.	115.	163.	81.	102.
HORIZ.	0.	0.	6.	41.	77.	105.	124.	130.	124.	105.	77.	41.	6.	0.	0.	0.	835.	118.	167.	82.	104.
MONTH 11	H0	1288.	T00	47.	TOT	44.	KT	.372	KD	.182											
ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME SATGS		SAG/ALL DAY SATGD	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	0.	28.	68.	94.	109.	114.	109.	94.	68.	28.	0.	0.	0.	0.	711.	105.	152.	67.	86.
SOUTHWEST	0.	0.	0.	6.	17.	43.	68.	89.	101.	103.	88.	43.	0.	0.	0.	0.	558.	92.	129.	62.	77.
WEST	0.	0.	0.	6.	15.	22.	26.	28.	49.	64.	65.	37.	0.	0.	0.	0.	312.	72.	93.	54.	63.
NORTHWEST	0.	0.	0.	6.	15.	22.	26.	28.	26.	22.	15.	13.	0.	0.	0.	0.	172.	61.	72.	50.	54.
NORTH	0.	0.	0.	6.	15.	22.	26.	28.	26.	22.	15.	6.	0.	0.	0.	0.	165.	60.	71.	50.	54.
NORTHEAST	0.	0.	0.	13.	15.	22.	26.	28.	26.	22.	15.	6.	0.	0.	0.	0.	172.	61.	72.	50.	54.
EAST	0.	0.	0.	37.	65.	84.	49.	28.	26.	22.	15.	6.	0.	0.	0.	0.	312.	72.	93.	54.	63.
SOUTHEAST	0.	0.	0.	43.	88.	103.	101.	89.	68.	43.	17.	6.	0.	0.	0.	0.	558.	92.	129.	62.	77.
HORIZ.	0.	0.	0.	14.	41.	64.	79.	84.	79.	64.	41.	14.	0.	0.	0.	0.	480.	86.	118.	60.	72.
MONTH 12	H0	1082.	T00	35.	TOT	33.	KT	.400	KD	.183											
ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME SATGS		SAG/ALL DAY SATGD	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	0.	17.	72.	104.	122.	128.	122.	104.	72.	17.	0.	0.	0.	0.	757.	100.	154.	57.	77.
SOUTHWEST	0.	0.	0.	4.	17.	46.	75.	98.	112.	112.	92.	25.	0.	0.	0.	0.	580.	85.	126.	51.	67.
WEST	0.	0.	0.	4.	12.	19.	24.	25.	50.	66.	65.	21.	0.	0.	0.	0.	286.	60.	80.	42.	49.
NORTHWEST	0.	0.	0.	4.	12.	19.	24.	25.	24.	19.	12.	7.	0.	0.	0.	0.	146.	48.	58.	37.	41.
NORTH	0.	0.	0.	4.	12.	19.	24.	25.	24.	19.	12.	4.	0.	0.	0.	0.	143.	47.	57.	37.	41.
NORTHEAST	0.	0.	0.	7.	12.	19.	24.	25.	24.	19.	12.	4.	0.	0.	0.	0.	146.	48.	58.	37.	41.
EAST	0.	0.	0.	21.	65.	66.	50.	25.	24.	19.	12.	4.	0.	0.	0.	0.	286.	60.	80.	42.	49.
SOUTHEAST	0.	0.	0.	25.	92.	112.	112.	88.	75.	46.	17.	4.	0.	0.	0.	0.	580.	85.	126.	51.	67.
SORIZ.	0.	0.	0.	7.	35.	59.	75.	80.	75.	59.	35.	7.	0.	0.	0.	0.	433.	72.	103.	47.	58.

LOCATION BOSTON, MASSACHUSETTS LATITUDE 42 DEGREES 21 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	99.	97.	100.	96.	107.	113.	121.	128.	135.	128.	105.	100.	111.
SOUTHWEST	84.	86.	95.	99.	115.	122.	130.	131.	129.	115.	92.	85.	107.
WEST	60.	61.	83.	96.	117.	126.	131.	127.	116.	95.	72.	60.	96.
NORTHWEST	46.	52.	68.	84.	106.	116.	120.	113.	98.	78.	61.	48.	83.
NORTH	46.	50.	62.	75.	93.	104.	107.	102.	91.	76.	60.	47.	76.
NORTHEAST	46.	52.	68.	84.	106.	116.	120.	113.	98.	78.	61.	48.	83.
EAST	60.	67.	83.	96.	117.	126.	131.	127.	116.	95.	72.	60.	96.
SOUTHEAST	84.	86.	95.	99.	115.	122.	130.	131.	129.	115.	92.	85.	107.
HORIZ.	75.	89.	112.	129.	162.	171.	177.	166.	148.	118.	86.	72.	125.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	154.	151.	149.	135.	143.	145.	157.	170.	187.	186.	152.	154.	157.
SOUTHWEST	127.	130.	140.	140.	157.	162.	172.	176.	177.	163.	129.	126.	150.
WEST	83.	97.	119.	134.	160.	168.	175.	168.	153.	125.	93.	80.	129.
NORTHWEST	58.	69.	91.	113.	140.	152.	155.	143.	122.	96.	72.	58.	106.
NORTH	57.	65.	80.	96.	118.	131.	133.	123.	109.	91.	71.	57.	94.
NORTHEAST	58.	69.	91.	113.	140.	152.	155.	143.	122.	96.	72.	58.	106.
EAST	83.	97.	119.	134.	160.	168.	175.	168.	153.	125.	93.	80.	129.
SOUTHEAST	127.	130.	140.	140.	157.	162.	172.	176.	177.	163.	129.	126.	150.
HORIZ.	110.	136.	170.	194.	239.	249.	256.	237.	211.	167.	118.	103.	183.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	56.	58.	68.	74.	86.	94.	101.	102.	99.	86.	67.	57.	79.
SOUTHWEST	50.	53.	65.	75.	91.	100.	106.	104.	96.	81.	62.	51.	78.
WEST	40.	45.	59.	73.	92.	102.	107.	101.	89.	72.	54.	42.	73.
NORTHWEST	35.	39.	52.	67.	85.	96.	100.	93.	80.	64.	50.	37.	67.
NORTH	35.	37.	49.	62.	78.	89.	92.	87.	76.	63.	50.	37.	63.
NORTHEAST	35.	39.	52.	67.	85.	96.	100.	93.	80.	64.	50.	37.	67.
EAST	40.	45.	59.	73.	92.	102.	107.	101.	89.	72.	54.	42.	73.
SOUTHEAST	50.	53.	65.	75.	91.	100.	106.	104.	96.	81.	62.	51.	78.
HORIZ.	46.	55.	74.	92.	119.	131.	135.	123.	105.	82.	60.	47.	89.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	77.	82.	92.	95.	108.	115.	123.	125.	125.	112.	86.	77.	101.
SOUTHWEST	67.	73.	88.	98.	117.	125.	132.	129.	120.	102.	77.	67.	99.
WEST	50.	58.	77.	94.	118.	129.	133.	124.	108.	85.	63.	49.	91.
NORTHWEST	40.	46.	63.	83.	106.	119.	121.	110.	92.	72.	54.	41.	79.
NORTH	39.	43.	58.	73.	93.	106.	108.	99.	86.	70.	54.	41.	73.
NORTHEAST	40.	46.	63.	83.	106.	119.	121.	110.	92.	72.	54.	41.	79.
EAST	50.	58.	77.	94.	118.	129.	133.	124.	108.	85.	63.	49.	91.
SOUTHEAST	67.	73.	88.	98.	117.	125.	132.	129.	120.	102.	77.	67.	99.
HORIZ.	60.	76.	103.	129.	167.	180.	183.	163.	137.	104.	72.	58.	119.

LOCATION BROWNSVILLE, TEXAS LATITUDE 25 DEGREES 54 MINUTES

MONTH	1	HO	2177.	TOD	63.	TOT	60.	HOURLY SOLAR RADIATION								KT	517	KD	.186			
ORIENTATION																						
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	0.	15.	79.	117.	143.	159.	165.	159.	143.	117.	79.	15.	0.	0.	0.					
SOUTHWEST	0.	0.	0.	4.	17.	29.	60.	98.	130.	154.	165.	161.	130.	29.	0.	0.	0.					
WEST	0.	0.	0.	4.	17.	29.	39.	45.	47.	85.	113.	127.	115.	28.	0.	0.	0.					
NORTHWEST	0.	0.	0.	4.	17.	29.	39.	45.	47.	45.	39.	37.	43.	13.	0.	0.	0.					
NORTH	0.	0.	0.	4.	17.	29.	39.	45.	47.	45.	39.	29.	17.	4.	0.	0.	0.					
NORTHEAST	0.	0.	0.	13.	43.	37.	39.	45.	47.	45.	39.	29.	17.	4.	0.	0.	0.					
EAST	0.	0.	0.	28.	115.	127.	113.	85.	47.	45.	39.	29.	17.	4.	0.	0.	0.					
SOUTHEAST	0.	0.	0.	29.	130.	161.	165.	154.	130.	98.	60.	29.	17.	4.	0.	0.	0.					
HORIZ.	0.	0.	0.	8.	56.	104.	142.	166.	174.	166.	142.	104.	56.	8.	0.	0.	0.					
DAILY TOTAL RADIATION																						
1192.																						
149.																						
220.																						
99.																						
130.																						
977.																						
117.																						
134.																						
192.																						
117.																						
110.																						
149.																						
81.																						
98.																						
649.																						
358.																						
81.																						
72.																						
315.																						
79.																						
71.																						
105.																						
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DAILY TOTAL RADIATION

SAG/DAYTIME SATGS SATGD

SAG/ALL DAY SATGS SATGD

MONTH 2	HO 2631.	TOD 67.	TOT 64.	KT	KT	500	KD	.188
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ORIENTATION		HOURLY SOLAR RADIATION																	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	28.	69.	101.	124.	139.	144.	139.	124.	101.	69.	28.	0.	0.	0.	1065.	139.	198.	98.	126.	
SOUTHWEST	0.	0.	0.	9.	23.	35.	50.	86.	117.	140.	152.	150.	129.	69.	0.	0.	0.	961.	132.	185.	95.	120.	
WEST	0.	0.	0.	9.	23.	35.	45.	51.	53.	90.	118.	133.	127.	75.	0.	0.	0.	758.	118.	160.	88.	108.	
NORTHWEST	0.	0.	0.	9.	23.	35.	45.	51.	53.	51.	45.	58.	64.	42.	0.	0.	0.	476.	99.	126.	79.	92.	
NORTH	0.	0.	0.	9.	23.	35.	45.	51.	53.	51.	45.	35.	23.	9.	0.	0.	0.	380.	93.	114.	76.	86.	
NORTHEAST	0.	0.	0.	42.	64.	58.	45.	51.	53.	51.	45.	35.	23.	9.	0.	0.	0.	476.	99.	126.	79.	92.	
EAST	0.	0.	0.	75.	127.	133.	118.	90.	53.	51.	45.	35.	23.	9.	0.	0.	0.	758.	118.	160.	88.	108.	
SOUTHEAST	0.	0.	0.	69.	129.	150.	152.	140.	117.	86.	50.	35.	23.	9.	0.	0.	0.	961.	132.	185.	95.	120.	
HORIZ.	0.	0.	0.	23.	75.	123.	160.	183.	191.	183.	160.	123.	75.	23.	0.	0.	0.	1318.	156.	230.	106.	141.	

DAILY TOTAL RADIATION

SAG/DAYTIME SATGS SATGD

SAG/ALL DAY SATGS SATGD

MONTH 3	HO 3069.	TOD 71.	TOT 68.	KT	KT	505	KD	.187
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ORIENTATION		HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION		SAG/DAYTIME		SAG/ALL DAY	
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			20	SATGS	SATGD	SATGS
SOUTH	0.	0.	0.	24.	56.	84.	106.	120.	125.	120.	106.	84.	56.	24.	0.	0.	0.	905.	129.	176.	97.	121.	
SOUTHWEST	0.	0.	0.	14.	28.	41.	51.	74.	105.	129.	142.	143.	126.	85.	0.	0.	0.	939.	131.	180.	98.	123.	
WEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	96.	125.	141.	140.	104.	0.	0.	0.	856.	126.	170.	96.	118.	
NORTHWEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	57.	64.	81.	88.	71.	0.	0.	0.	610.	110.	142.	88.	104.	
NORTH	0.	0.	0.	14.	28.	41.	51.	57.	59.	57.	51.	41.	28.	14.	0.	0.	0.	441.	99.	122.	82.	94.	
NORTHEAST	0.	0.	0.	71.	88.	81.	64.	57.	59.	57.	51.	41.	28.	14.	0.	0.	0.	610.	110.	142.	88.	104.	
EAST	0.	0.	0.	104.	140.	141.	125.	96.	59.	57.	51.	41.	28.	14.	0.	0.	0.	856.	126.	170.	96.	118.	
SOUTHEAST	0.	0.	0.	85.	126.	143.	142.	129.	105.	74.	51.	41.	28.	14.	0.	0.	0.	939.	131.	180.	98.	123.	
HORIZ.	0.	0.	0.	42.	96.	144.	181.	205.	213.	205.	181.	144.	96.	42.	0.	0.	0.	1547.	170.	251.	118.	158.	

DAILY TOTAL RADIATION

SAG/DAYTIME SATGS SATGD

SAG/ALL DAY SATGS SATGD

LOCATION BROWNSVILLE, TEXAS LATITUDE 25 DEGREES 54 MINUTES

MONTH	4	HO	3424.	TOD	76.	TOT	74.	KT	.509	KD	.187						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	5.	19.	37.	62.	82.	95.	99.	95.	82.	62.	37.	19.	5.	0.	0.
SOUTHWEST	0.	0.	5.	19.	33.	45.	54.	60.	88.	112.	125.	127.	114.	83.	19.	0.	0.
WEST	0.	0.	5.	19.	33.	45.	54.	60.	62.	99.	127.	144.	144.	118.	29.	0.	0.
NORTHWEST	0.	0.	5.	19.	33.	45.	54.	60.	62.	63.	87.	103.	109.	94.	25.	0.	0.
NORTH	0.	0.	9.	27.	33.	45.	54.	60.	62.	60.	54.	45.	33.	27.	9.	0.	0.
NORTHEAST	0.	0.	25.	94.	109.	103.	87.	63.	62.	60.	54.	45.	33.	19.	5.	0.	0.
EAST	0.	0.	29.	118.	144.	144.	127.	99.	62.	60.	54.	45.	33.	19.	5.	0.	0.
SOUTHEAST	0.	0.	19.	83.	114.	127.	125.	112.	88.	60.	54.	45.	33.	19.	5.	0.	0.
HORIZ.	0.	0.	10.	59.	113.	160.	197.	220.	227.	220.	197.	160.	113.	59.	10.	0.	0.

MONTH	5	HO	3597.	TOD	81.	TOT	79.	KT	.584	KD	.176						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	8.	22.	36.	47.	65.	79.	83.	79.	65.	47.	36.	22.	8.	0.	0.
SOUTHWEST	0.	0.	8.	22.	36.	47.	57.	62.	78.	106.	124.	129.	118.	90.	36.	0.	0.
WEST	0.	0.	8.	22.	36.	47.	57.	62.	64.	109.	144.	167.	170.	146.	68.	0.	0.
NORTHWEST	0.	0.	8.	22.	36.	47.	57.	62.	64.	84.	113.	134.	143.	130.	64.	0.	0.
NORTH	0.	0.	28.	50.	53.	51.	57.	62.	64.	62.	57.	51.	53.	50.	28.	0.	0.
NORTHEAST	0.	0.	64.	130.	143.	134.	113.	84.	64.	62.	57.	47.	36.	22.	8.	0.	0.
EAST	0.	0.	68.	146.	170.	167.	144.	109.	64.	62.	57.	47.	36.	22.	8.	0.	0.
SOUTHEAST	0.	0.	36.	90.	118.	129.	124.	106.	78.	62.	57.	47.	36.	22.	8.	0.	0.
HORIZ.	0.	0.	21.	79.	138.	191.	232.	257.	266.	257.	232.	191.	138.	79.	21.	0.	0.

MONTH	6	HO	3647.	TOD	85.	TOT	83.	KT	.627	KD	.167						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	9.	23.	36.	48.	57.	69.	74.	69.	57.	48.	36.	23.	9.	0.	0.
SOUTHWEST	0.	0.	9.	23.	36.	48.	57.	62.	71.	103.	123.	130.	120.	92.	41.	0.	0.
WEST	0.	0.	9.	23.	36.	48.	57.	62.	64.	113.	153.	179.	184.	161.	84.	0.	0.
NORTHWEST	0.	0.	9.	23.	36.	48.	57.	62.	64.	94.	126.	151.	162.	148.	82.	0.	0.
NORTH	0.	0.	38.	62.	65.	63.	59.	62.	64.	62.	59.	63.	65.	62.	38.	0.	0.
NORTHEAST	0.	0.	82.	148.	162.	151.	126.	94.	64.	62.	57.	48.	36.	23.	9.	0.	0.
EAST	0.	0.	84.	161.	184.	179.	153.	113.	64.	62.	57.	48.	36.	23.	9.	0.	0.
SOUTHEAST	0.	0.	41.	92.	120.	130.	123.	103.	71.	62.	57.	48.	36.	23.	9.	0.	0.
HORIZ.	0.	0.	27.	88.	151.	207.	250.	277.	287.	277.	250.	207.	151.	88.	27.	0.	0.
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LOCATION	BROWNSVILLE, TEXAS				LATITUDE 25 DEGREES				54 MINUTES													
MONTH	7	H0	3589.	TOD	86.	TOT	84.	KT	.650	KD	.162											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS	
SOUTH	0.	0.	7.	21.	35.	47.	65.	81.	86.	81.	65.	47.	35.	21.	7.	0.	0.	601.	123.	152.	104.	120.
SOUTHWEST	0.	0.	7.	21.	35.	47.	56.	62.	80.	114.	137.	144.	133.	101.	40.	0.	0.	978.	146.	192.	117.	143.
WEST	0.	0.	7.	21.	35.	47.	56.	62.	64.	118.	161.	189.	195.	168.	76.	0.	0.	1200.	160.	216.	125.	156.
NORTHWEST	0.	0.	7.	21.	35.	47.	56.	62.	64.	88.	124.	151.	163.	149.	72.	0.	0.	1041.	150.	199.	119.	147.
NORTH	0.	0.	30.	55.	57.	52.	56.	62.	64.	62.	56.	52.	57.	55.	30.	0.	0.	690.	129.	161.	107.	125.
NORTHEAST	0.	0.	72.	149.	163.	151.	124.	88.	64.	62.	56.	47.	35.	21.	7.	0.	0.	1041.	150.	199.	119.	147.
EAST	0.	0.	76.	168.	195.	189.	161.	118.	64.	62.	56.	47.	35.	21.	7.	0.	0.	1200.	160.	216.	125.	156.
SOUTHEAST	0.	0.	40.	101.	133.	144.	137.	114.	80.	62.	56.	47.	35.	21.	7.	0.	0.	978.	146.	192.	117.	143.
HORIZ.	0.	0.	22.	86.	153.	212.	258.	287.	297.	287.	258.	212.	153.	86.	22.	0.	0.	2334.	230.	339.	164.	225.
MONTH	8	H0	3396.	TOD	87.	TOT	84.	KT	.617	KD	.170											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS	
SOUTH	0.	0.	4.	18.	38.	68.	93.	109.	114.	109.	93.	68.	38.	18.	4.	0.	0.	773.	137.	175.	111.	131.
SOUTHWEST	0.	0.	4.	18.	33.	45.	55.	61.	99.	132.	153.	158.	143.	104.	20.	0.	0.	1027.	153.	203.	119.	146.
WEST	0.	0.	4.	18.	33.	45.	55.	61.	63.	115.	156.	181.	184.	150.	32.	0.	0.	1099.	157.	211.	122.	150.
NORTHWEST	0.	0.	4.	18.	33.	45.	55.	61.	63.	65.	100.	126.	137.	119.	28.	0.	0.	855.	142.	184.	113.	136.
NORTH	0.	0.	10.	29.	33.	45.	55.	61.	63.	61.	55.	45.	33.	29.	10.	0.	0.	531.	121.	147.	102.	116.
NORTHEAST	0.	0.	28.	119.	137.	126.	100.	65.	63.	61.	55.	45.	33.	18.	4.	0.	0.	855.	142.	184.	113.	136.
EAST	0.	0.	32.	150.	184.	181.	156.	115.	63.	61.	55.	45.	33.	18.	4.	0.	0.	1099.	157.	211.	122.	150.
SOUTHEAST	0.	0.	20.	104.	143.	158.	153.	132.	99.	61.	55.	45.	33.	18.	4.	0.	0.	1027.	153.	203.	119.	146.
HORIZ.	0.	0.	9.	68.	134.	193.	238.	267.	277.	267.	238.	193.	134.	68.	9.	0.	0.	2095.	221.	324.	156.	211.
MONTH	9	H0	3046.	TOD	84.	TOT	81.	KT	.566	KD	.179											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	25.	60.	92.	117.	133.	139.	133.	117.	92.	60.	25.	0.	0.	0.	995.	152.	204.	115.	142.
SOUTHWEST	0.	0.	0.	14.	28.	41.	51.	57.	115.	145.	162.	163.	145.	95.	0.	0.	0.	1036.	155.	209.	117.	144.
WEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	105.	141.	162.	161.	117.	0.	0.	0.	937.	148.	197.	113.	138.
NORTHWEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	57.	68.	91.	99.	79.	0.	0.	0.	645.	128.	162.	103.	120.
NORTH	0.	0.	0.	14.	28.	41.	51.	57.	59.	57.	51.	41.	28.	14.	0.	0.	0.	443.	114.	137.	97.	108.
NORTHEAST	0.	0.	0.	79.	99.	91.	68.	57.	59.	57.	51.	41.	28.	14.	0.	0.	0.	645.	128.	162.	103.	120.
EAST	0.	0.	0.	117.	161.	162.	141.	105.	59.	57.	51.	41.	28.	14.	0.	0.	0.	937.	148.	197.	113.	138.
SOUTHEAST	0.	0.	0.	95.	145.	163.	162.	145.	115.	77.	51.	41.	28.	14.	0.	0.	0.	1036.	155.	209.	117.	144.
HORIZ.	0.	0.	0.	44.	105.	160.	203.	230.	239.	230.	203.	160.	105.	44.	0.	0.	0.	1722.	202.	292.	140.	185.

LOCATION	BROWNSVILLE, TEXAS	LATITUDE	25 DEGREES	54 MINUTES
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MONTH	10	H0	2597.	T00	70.	T0T	76.	HOURLY SOLAR RADIATION										KT	.570	K0	.17P	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
								4	5	6	7	8	9	10	11	12	13						14	15	16	17
	ORIENTATION																									
	SOUTH	0.	0.	0.	30.	80.	118.	145.	162.	168.	162.	145.	118.	80.	30.	0.	0.	0.	1238.	163.	232.	116.	148.			
	SOUTHWEST	0.	0.	0.	8.	23.	35.	52.	96.	135.	164.	180.	170.	153.	76.	0.	0.	0.	1101.	154.	215.	111.	140.			
	WEST	0.	0.	0.	8.	23.	35.	45.	52.	54.	100.	136.	156.	150.	83.	0.	0.	0.	842.	136.	183.	103.	125.			
	NORTHWEST	0.	0.	0.	8.	23.	35.	45.	52.	54.	52.	45.	63.	72.	45.	0.	0.	0.	494.	113.	140.	92.	105.			
	NORTH	0.	0.	0.	8.	23.	35.	45.	52.	54.	52.	45.	35.	23.	8.	0.	0.	0.	380.	105.	126.	88.	98.			
	NORTHEAST	0.	0.	0.	45.	72.	63.	45.	52.	54.	52.	45.	35.	23.	8.	0.	0.	0.	494.	113.	140.	92.	105.			
	EAST	0.	0.	0.	83.	150.	156.	136.	100.	54.	52.	45.	35.	23.	8.	0.	0.	0.	842.	136.	183.	103.	125.			
	SOUTHEAST	0.	0.	0.	76.	153.	179.	180.	164.	135.	96.	52.	35.	23.	8.	0.	0.	0.	1101.	154.	215.	111.	140.			
	HORIZ.	0.	0.	0.	23.	83.	138.	181.	208.	217.	208.	181.	138.	83.	23.	0.	0.	0.	1482.	180.	262.	124.	162.			

MONTH	11	HO	2164.	TOD	71.	TOT	HOURLY SOLAR RADIATION										KT	.46A	KD	.186	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
							4	5	6	7	8	9	10	11	12	13						14	15	16	17
ORIENTATION																									
	SOUTH	0	0	0	12	6A	103.	126.	141.	145.	141.	126.	103.	68.	12	0	0	0	1045.	146.	208.	101.	129.		
	SOUTHWEST	0	0	0	4	17	28.	56.	8A.	116.	136.	145.	139.	111.	23.	0	0	0	862.	133.	184.	95.	118.		
	WEST	0	0	0	0	4	17.	28.	37.	43.	45.	77.	100.	111.	98.	22.	0	0	583.	113.	147.	87.	102.		
	NORTHWEST	0	0	0	0	4	17.	28.	37.	43.	45.	43.	37.	34.	38.	11.	0	0	338.	95.	115.	79.	87.		
	NORTH	0	0	0	0	4	17.	28.	37.	43.	45.	43.	37.	2A.	17.	4.	0	0	303.	93.	111.	78.	85.		
	NORTHEAST	0	0	0	0	11.	3A.	37.	43.	45.	43.	37.	2A.	17.	4.	0	0	33A.	95.	115.	79.	87.			
	EAST	0	0	0	22.	9A.	111.	100.	77.	45.	43.	37.	2A.	17.	4.	0	0	583.	113.	147.	87.	102.			
	SOUTHEAST	0	0	0	23.	111.	139.	145.	136.	116.	88.	56.	2A.	17.	4.	0	0	862.	133.	184.	95.	11A.			
	SORIZ.	0	0	0	7.	51.	94.	128.	149.	156.	149.	128.	94.	51.	7.	0	0	1012.	144.	204.	100.	127.			

MONTH	12	H0	1989.	TOD	65.	TOT	HOURLY SOLAR RADIATION								KT	.488	KD	.187	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY			
							4	5	6	7	8	9	10	11						12	13	14	15	16	17
ORIENTATION																									
	0	0	0	0	0	0	4	72	111	137	152	157	152	137	111	72	4	0	0	0	1111.	148.	215.	98.	127.
	SOUTH																								
	0	0	0	0	0	0	2	15	26	61	95	124	145	154	147	113	7	0	0	0	888.	131.	185.	91.	114.
	SOUTHWEST																								
	0	0	0	0	0	0	2	15	26	36	41	43	77	101	112	97	7	0	0	0	557.	107.	140.	80.	95.
	WEST																								
	0	0	0	0	0	0	2	15	26	36	41	43	41	36	27	32	4	0	0	0	303.	88.	106.	72.	80.
	NORTHWEST																								
	0	0	0	0	0	0	2	15	26	36	41	43	41	36	26	15	2	0	0	0	283.	86.	103.	71.	79.
	NORTH																								
	0	0	0	0	0	0	4	32	27	36	41	43	41	36	26	15	2	0	0	0	303.	88.	106.	72.	80.
	NORTHEAST																								
	0	0	0	0	0	0	7	97	112	101	77	43	41	36	26	15	2	0	0	0	557.	107.	140.	80.	95.
	EAST																								
	0	0	0	0	0	0	7	113	147	154	145	124	95	61	26	15	2	0	0	0	888.	131.	185.	91.	114.
	SOUTHEAST																								
	0	0	0	0	0	0	4	45	89	124	146	154	146	124	89	45	4	0	0	0	969.	137.	196.	93.	119.
	HORIZ.																								

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	149.	139.	129.	118.	118.	119.	123.	137.	152.	163.	146.	148.	137.
SOUTHWEST	134.	132.	131.	129.	137.	140.	146.	153.	155.	154.	133.	131.	140.
WEST	110.	118.	126.	133.	149.	156.	160.	157.	148.	136.	113.	107.	134.
NORTHWEST	89.	99.	110.	122.	141.	149.	150.	142.	128.	113.	95.	88.	119.
NORTH	86.	93.	99.	107.	122.	131.	129.	121.	114.	105.	93.	86.	107.
NORTHEAST	89.	99.	110.	122.	141.	149.	150.	142.	128.	113.	95.	88.	119.
EAST	110.	118.	126.	133.	149.	156.	160.	157.	148.	136.	113.	107.	134.
SOUTHEAST	134.	132.	131.	129.	137.	140.	146.	153.	155.	134.	113.	131.	140.
HORIZ.	145.	156.	170.	181.	210.	223.	230.	221.	202.	180.	144.	137.	183.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	220.	198.	176.	152.	146.	144.	152.	175.	204.	232.	208.	215.	185.
SOUTHWEST	192.	185.	180.	173.	180.	182.	192.	203.	209.	215.	184.	185.	190.
WEST	149.	160.	170.	179.	201.	210.	216.	211.	197.	183.	147.	140.	180.
NORTHWEST	110.	126.	142.	159.	186.	198.	199.	184.	162.	140.	115.	106.	152.
NORTH	105.	114.	122.	133.	154.	166.	161.	157.	137.	126.	111.	103.	132.
NORTHEAST	110.	126.	142.	159.	186.	198.	199.	184.	162.	140.	115.	106.	152.
EAST	149.	160.	170.	179.	201.	210.	216.	211.	197.	183.	147.	140.	180.
SOUTHEAST	192.	185.	180.	173.	180.	182.	192.	203.	209.	215.	184.	185.	190.
HORIZ.	211.	230.	251.	267.	309.	329.	339.	324.	292.	262.	204.	196.	268.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	99.	98.	97.	96.	99.	102.	104.	111.	115.	116.	101.	98.	103.
SOUTHWEST	92.	95.	98.	102.	110.	114.	117.	119.	117.	111.	95.	91.	105.
WEST	81.	88.	96.	104.	116.	123.	125.	122.	113.	103.	87.	80.	103.
NORTHWEST	72.	79.	88.	98.	112.	119.	119.	113.	103.	92.	79.	72.	96.
NORTH	71.	76.	82.	90.	102.	109.	107.	102.	97.	88.	78.	71.	89.
NORTHEAST	72.	79.	88.	98.	112.	119.	119.	113.	103.	92.	79.	72.	96.
EAST	81.	88.	96.	104.	116.	123.	125.	122.	113.	103.	87.	80.	103.
SOUTHEAST	92.	95.	98.	102.	110.	114.	117.	119.	117.	111.	95.	91.	105.
HORIZ.	97.	106.	118.	130.	151.	161.	164.	156.	140.	124.	100.	93.	128.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	130.	126.	121.	114.	115.	116.	120.	131.	142.	148.	129.	127.	127.
SOUTHWEST	117.	120.	123.	125.	134.	138.	143.	146.	144.	140.	118.	114.	130.
WEST	98.	108.	118.	128.	145.	153.	156.	150.	125.	102.	102.	95.	127.
NORTHWEST	81.	92.	104.	118.	137.	147.	147.	136.	120.	105.	87.	80.	113.
NORTH	79.	86.	94.	104.	119.	129.	125.	116.	108.	98.	85.	79.	102.
NORTHEAST	81.	92.	104.	118.	137.	147.	147.	136.	120.	105.	87.	80.	113.
EAST	98.	108.	118.	128.	145.	153.	156.	150.	138.	125.	102.	95.	127.
SOUTHEAST	117.	120.	123.	125.	134.	138.	143.	146.	144.	140.	118.	114.	130.
HORIZ.	126.	141.	158.	175.	206.	221.	225.	211.	185.	162.	127.	119.	171.

LOCATION		CARIBOU, MAINE		LATITUDE		46 DEGREES		51 MINUTES									
MONTH	1	HO	1051.	TOD	11.	TOT	9.	KT	.504	KD	.187						
ORIENTATION		HOURLY SOLAR RADIATION															
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	24.	98.	144.	170.	178.	170.	144.	98.	24.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	4.	17.	58.	100.	134.	155.	157.	129.	38.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	4.	13.	20.	25.	27.	64.	91.	92.	32.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	4.	13.	20.	25.	27.	25.	20.	13.	10.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	4.	13.	20.	25.	27.	25.	20.	13.	4.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	10.	13.	20.	25.	27.	25.	20.	13.	4.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	32.	92.	91.	64.	27.	25.	20.	13.	4.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	38.	129.	157.	155.	134.	100.	58.	17.	4.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	9.	42.	72.	92.	99.	92.	72.	42.	9.	0.	0.	0.	0.
		DAILY TOTAL RADIATION										SAG/DAYTIME SATGS		SAG/ALL DAY SATGS			
		1049.										101.		175.		42.	
		792.										79.		135.		34.	
		369.										43.		69.		21.	
		158.										25.		36.		14.	
		152.										25.		35.		14.	
		158.										25.		36.		14.	
		369.										43.		69.		21.	
		792.										79.		135.		34.	
		530.										57.		94.		26.	
MONTH	2	HO	1645.	TOD	13.	TOT	10.	KT	.579	KD	.177						
ORIENTATION		HOURLY SOLAR RADIATION															
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	5.	75.	132.	173.	198.	207.	198.	173.	132.	75.	5.	0.	0.	0.
SOUTHWEST	0.	0.	0.	2.	12.	22.	65.	115.	157.	186.	198.	185.	135.	9.	0.	0.	0.
WEST	0.	0.	0.	2.	12.	22.	30.	35.	37.	86.	124.	143.	123.	10.	0.	0.	0.
NORTHWEST	0.	0.	0.	2.	12.	22.	30.	35.	37.	35.	30.	30.	46.	6.	0.	0.	0.
NORTH	0.	0.	0.	2.	12.	22.	30.	35.	37.	35.	30.	22.	12.	2.	0.	0.	0.
NORTHEAST	0.	0.	0.	6.	46.	30.	30.	35.	37.	35.	30.	22.	12.	2.	0.	0.	0.
EAST	0.	0.	0.	10.	123.	143.	124.	86.	37.	35.	30.	22.	12.	2.	0.	0.	0.
SOUTHEAST	0.	0.	0.	9.	135.	185.	198.	186.	157.	115.	65.	22.	12.	2.	0.	0.	0.
HORIZ.	0.	0.	0.	4.	43.	87.	122.	144.	152.	144.	122.	87.	43.	4.	0.	0.	0.
		DAILY TOTAL RADIATION										SAG/DAYTIME SATGS		SAG/ALL DAY SATGS			
		1373.										114.		196.		54.	
		1087.										93.		158.		45.	
		625.										59.		96.		30.	
		286.										34.		51.		19.	
		241.										30.		45.		18.	
		286.										34.		51.		19.	
		625.										59.		96.		30.	
		1087.										93.		158.		45.	
		952.										83.		140.		40.	
MONTH	3	HO	2345.	TOD	24.	TOT	22.	KT	.619	KD	.169						
ORIENTATION		HOURLY SOLAR RADIATION															
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	32.	95.	135.	173.	198.	206.	198.	173.	135.	85.	32.	0.	0.	0.
SOUTHWEST	0.	0.	0.	10.	22.	32.	59.	113.	159.	193.	209.	205.	174.	105.	0.	0.	0.
WEST	0.	0.	0.	10.	22.	32.	40.	45.	46.	101.	146.	174.	123.	10.	0.	0.	0.
NORTHWEST	0.	0.	0.	10.	22.	32.	40.	45.	46.	45.	40.	59.	85.	75.	0.	0.	0.
NORTH	0.	0.	0.	10.	22.	32.	40.	45.	46.	45.	40.	32.	22.	10.	0.	0.	0.
NORTHEAST	0.	0.	0.	75.	85.	59.	40.	45.	46.	45.	40.	32.	22.	10.	0.	0.	0.
EAST	0.	0.	0.	123.	174.	174.	146.	101.	46.	45.	40.	32.	22.	10.	0.	0.	0.
SOUTHEAST	0.	0.	0.	105.	174.	205.	209.	193.	159.	113.	59.	32.	22.	10.	0.	0.	0.
HORIZ.	0.	0.	0.	35.	87.	135.	172.	195.	203.	195.	172.	135.	87.	35.	0.	0.	0.
		DAILY TOTAL RADIATION										SAG/DAYTIME SATGS		SAG/ALL DAY SATGS			
		1452.										117.		193.		68.	
		1282.										106.		173.		63.	
		913.										83.		130.		51.	
		498.										56.		82.		38.	
		343.										46.		64.		33.	
		498.										56.		82.		38.	
		913.										83.		130.		51.	
		1282.										106.		173.		63.	
		1451.										117.		193.		68.	



LOCATION		CARIBOU, MAINE		LATITUDE 46 DEGREES 51 MINUTES																		
MONTH	4	HO	3079.	TOD	37.	TOT	35.	KT	.507	KD	.187						DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	TIME SATGS	SAG/ALL DAY SATGS		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	8.	24.	59.	92.	118.	135.	141.	135.	118.	92.	59.	24.	8.	0.	0.	1014.	94.	140.	67.	94.
SOUTHWEST	0.	0.	8.	19.	30.	40.	47.	83.	115.	138.	149.	147.	130.	96.	43.	0.	0.	1045.	96.	144.	68.	96.
WEST	0.	0.	8.	19.	30.	40.	47.	51.	53.	90.	120.	139.	142.	123.	65.	0.	0.	928.	89.	132.	64.	89.
NORTHWEST	0.	0.	8.	19.	30.	40.	47.	51.	53.	51.	48.	73.	89.	90.	54.	0.	0.	654.	74.	104.	56.	73.
NORTH	0.	0.	16.	19.	30.	40.	47.	51.	53.	51.	47.	40.	30.	19.	16.	0.	0.	460.	63.	84.	49.	62.
NORTHEAST	0.	0.	54.	90.	99.	73.	48.	51.	53.	51.	47.	40.	30.	19.	8.	0.	0.	654.	74.	104.	56.	73.
EAST	0.	0.	65.	123.	142.	139.	120.	90.	53.	51.	47.	40.	30.	19.	8.	0.	0.	928.	89.	132.	64.	89.
SOUTHEAST	0.	0.	43.	96.	130.	147.	149.	138.	115.	83.	47.	40.	30.	19.	8.	0.	0.	1045.	96.	144.	68.	96.
HORIZ.	0.	0.	21.	62.	104.	141.	169.	187.	193.	187.	169.	141.	104.	62.	21.	0.	0.	1561.	125.	196.	85.	126.
MONTH	5	HO	3575.	TOD	52.	TOT	48.	KT	.509	KD	.187						DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	TIME SATGS	SAG/ALL DAY SATGS		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	4.	14.	25.	50.	80.	104.	120.	125.	120.	104.	80.	50.	25.	14.	4.	0.	922.	102.	140.	80.	104.
SOUTHWEST	0.	4.	14.	25.	35.	44.	51.	75.	105.	127.	138.	137.	123.	97.	58.	11.	0.	1047.	109.	152.	84.	112.
WEST	0.	4.	14.	25.	35.	44.	51.	55.	57.	92.	121.	140.	145.	133.	97.	22.	0.	1038.	108.	152.	84.	111.
NORTHWEST	0.	4.	14.	25.	35.	44.	51.	55.	57.	55.	63.	87.	103.	107.	87.	23.	0.	811.	96.	130.	76.	98.
NORTH	0.	12.	35.	32.	35.	44.	51.	55.	57.	55.	51.	44.	35.	32.	35.	12.	0.	588.	84.	108.	69.	84.
NORTHEAST	0.	23.	87.	107.	103.	87.	63.	55.	57.	55.	51.	44.	35.	25.	14.	4.	0.	811.	96.	130.	76.	98.
EAST	0.	22.	97.	133.	145.	140.	121.	92.	57.	55.	51.	44.	35.	25.	14.	4.	0.	1038.	108.	152.	84.	111.
SOUTHEAST	0.	11.	58.	97.	123.	137.	138.	127.	105.	75.	51.	44.	35.	25.	14.	4.	0.	1047.	109.	152.	84.	112.
HORIZ.	0.	9.	42.	84.	124.	159.	186.	203.	209.	203.	186.	159.	124.	84.	42.	9.	0.	1820.	151.	227.	111.	158.
MONTH	6	HO	3762.	TOD	62.	TOT	58.	KT	.473	KD	.187						DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	TIME SATGS	SAG/ALL DAY SATGS		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	7.	16.	27.	44.	70.	92.	106.	110.	106.	92.	70.	44.	27.	16.	7.	0.	832.	105.	139.	87.	109.
SOUTHWEST	0.	7.	16.	27.	36.	45.	51.	68.	95.	113.	123.	122.	109.	87.	55.	17.	0.	970.	112.	151.	92.	117.
WEST	0.	7.	16.	27.	36.	45.	51.	55.	56.	87.	112.	128.	132.	122.	93.	37.	0.	1004.	114.	154.	93.	119.
NORTHWEST	0.	7.	16.	27.	36.	45.	51.	55.	56.	55.	65.	85.	99.	102.	87.	39.	0.	824.	105.	138.	87.	108.
NORTH	0.	22.	39.	37.	36.	45.	51.	55.	56.	55.	51.	45.	36.	37.	39.	22.	0.	626.	94.	120.	80.	96.
NORTHEAST	0.	39.	87.	102.	99.	85.	65.	55.	56.	55.	51.	45.	36.	27.	16.	7.	0.	824.	105.	138.	87.	108.
EAST	0.	37.	93.	122.	132.	128.	112.	87.	56.	55.	51.	45.	36.	27.	16.	7.	0.	1004.	114.	154.	93.	119.
SOUTHEAST	0.	17.	55.	87.	109.	122.	123.	113.	85.	68.	51.	45.	36.	27.	16.	7.	0.	970.	112.	151.	92.	117.
SORIZ.	0.	15.	48.	85.	121.	153.	177.	193.	198.	193.	177.	153.	121.	85.	48.	15.	0.	1779.	155.	226.	119.	166.

LOCATION	CARIBOU, MAINE										LATITUDE 46 DEGREES 51 MINUTES												
MONTH	7	HO	3575.	TOU	67.	TOT	64.	KT	.522	KD	.185												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SAT6D		SAG/ALL DAY SATGS SAT6D	
SOUTH	0.	4.	14.	25.	50.	81.	106.	123.	128.	123.	106.	81.	50.	25.	14.	4.	0.	937.	118.	157.	96.	121.	121.
SOUTHWEST	0.	4.	14.	25.	35.	44.	51.	76.	107.	110.	142.	141.	127.	99.	59.	11.	0.	1067.	125.	170.	100.	128.	128.
WEST	0.	4.	14.	25.	35.	44.	51.	55.	57.	94.	124.	144.	150.	137.	98.	22.	0.	1058.	125.	169.	100.	128.	128.
NORTHWEST	0.	4.	14.	25.	35.	44.	51.	55.	57.	55.	64.	89.	106.	110.	89.	23.	0.	823.	112.	146.	82.	114.	114.
NORTH	0.	13.	36.	33.	35.	44.	51.	55.	57.	55.	51.	44.	35.	33.	36.	13.	0.	592.	99.	124.	84.	100.	100.
NORTHEAST	0.	23.	89.	110.	106.	89.	64.	55.	57.	55.	51.	44.	35.	25.	14.	4.	0.	823.	112.	146.	82.	114.	114.
EAST	0.	22.	98.	137.	150.	144.	124.	94.	57.	55.	51.	44.	35.	25.	14.	4.	0.	1058.	125.	169.	100.	128.	128.
SOUTHEAST	0.	11.	59.	99.	127.	141.	142.	130.	107.	76.	51.	44.	35.	25.	14.	4.	0.	1067.	125.	170.	100.	128.	128.
HORIZ.	0.	9.	43.	85.	127.	163.	191.	209.	215.	209.	191.	163.	127.	85.	43.	9.	0.	1867.	169.	246.	128.	177.	177.
MONTH	8	HO	3058.	TOU	65.	TOT	62.	KT	.527	KD	.184												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SAT6D		SAG/ALL DAY SATGS SAT6D	
SOUTH	0.	0.	8.	24.	60.	95.	123.	141.	147.	141.	123.	95.	60.	24.	8.	0.	0.	1048.	128.	175.	98.	125.	125.
SOUTHWEST	0.	0.	8.	19.	30.	39.	47.	85.	110.	144.	156.	153.	135.	99.	41.	0.	0.	1076.	129.	178.	99.	127.	127.
WEST	0.	0.	8.	19.	30.	39.	47.	51.	53.	93.	125.	145.	148.	127.	63.	0.	0.	948.	122.	165.	94.	119.	119.
NORTHWEST	0.	0.	8.	19.	30.	39.	47.	51.	53.	51.	48.	75.	92.	92.	53.	0.	0.	659.	104.	134.	84.	102.	102.
NORTH	0.	0.	16.	19.	30.	39.	47.	51.	53.	51.	47.	39.	30.	19.	16.	0.	0.	459.	92.	113.	77.	90.	90.
NORTHEAST	0.	0.	53.	92.	92.	75.	48.	51.	53.	51.	47.	39.	30.	19.	8.	0.	0.	659.	104.	134.	84.	102.	102.
EAST	0.	0.	63.	127.	148.	145.	125.	93.	53.	51.	47.	39.	30.	19.	8.	0.	0.	948.	122.	165.	94.	119.	119.
SOUTHEAST	0.	0.	41.	99.	135.	153.	156.	144.	119.	85.	47.	39.	30.	19.	8.	0.	0.	1076.	129.	178.	99.	127.	127.
HORIZ.	0.	0.	21.	63.	107.	145.	175.	194.	201.	194.	175.	145.	107.	63.	21.	0.	0.	1612.	161.	235.	117.	159.	159.
MONTH	9	HO	2338.	TOU	56.	TOT	53.	KT	.506	KD	.187												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SAT6D		SAG/ALL DAY SATGS SAT6D	
SOUTH	0.	0.	0.	25.	65.	103.	132.	151.	158.	151.	132.	103.	65.	25.	0.	0.	0.	1110.	132.	189.	91.	120.	120.
SOUTHWEST	0.	0.	0.	11.	22.	31.	52.	91.	125.	148.	158.	152.	127.	73.	0.	0.	0.	989.	123.	175.	87.	113.	113.
WEST	0.	0.	0.	11.	22.	31.	39.	43.	45.	83.	114.	131.	127.	85.	0.	0.	0.	730.	106.	144.	78.	97.	97.
NORTHWEST	0.	0.	0.	11.	22.	31.	39.	43.	45.	43.	39.	51.	65.	53.	0.	0.	0.	442.	86.	109.	68.	80.	80.
NORTH	0.	0.	0.	11.	22.	31.	39.	43.	45.	43.	39.	31.	22.	11.	0.	0.	0.	336.	79.	97.	65.	74.	74.
NORTHEAST	0.	0.	0.	53.	65.	51.	39.	43.	45.	43.	39.	31.	22.	11.	0.	0.	0.	442.	86.	109.	68.	80.	80.
EAST	0.	0.	0.	85.	127.	131.	114.	83.	45.	43.	39.	31.	22.	11.	0.	0.	0.	730.	106.	144.	78.	97.	97.
SOUTHEAST	0.	0.	0.	73.	127.	152.	158.	148.	125.	91.	52.	31.	22.	11.	0.	0.	0.	989.	123.	175.	87.	113.	113.
HORIZ.	0.	0.	1.	29.	71.	109.	139.	158.	165.	158.	139.	109.	71.	29.	1.	0.	0.	1182.	136.	198.	94.	125.	125.

LOCATION CARIBOU, MAINE LATITUDE 46 DEGREES 51 MINUTES

MONTH	10	HO	1612.	TOD	45.	TOT	42.	HOURLY SOLAR RADIATION						KT	.455	KD	.186				DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20									
SOUTH	0.	0.	0.	3.	51.	93.	124.	142.	149.	142.	124.	93.	51.	3.	0.	0.	0.	975.	117.	175.	73.	99.				
SOUTHWEST	0.	0.	0.	2.	12.	21.	51.	86.	115.	134.	140.	124.	89.	4.	0.	0.	0.	782.	102.	149.	67.	88.				
WEST	0.	0.	0.	2.	12.	21.	28.	32.	34.	66.	91.	100.	81.	4.	0.	0.	0.	471.	79.	108.	57.	70.				
NORTHWEST	0.	0.	0.	2.	12.	21.	28.	32.	34.	32.	28.	26.	33.	3.	0.	0.	0.	250.	63.	78.	50.	57.				
NORTH	0.	0.	0.	2.	12.	21.	28.	32.	34.	32.	28.	21.	12.	2.	0.	0.	0.	223.	61.	75.	49.	55.				
NORTHEAST	0.	0.	0.	3.	33.	26.	28.	32.	34.	32.	28.	21.	12.	2.	0.	0.	0.	250.	63.	78.	50.	57.				
EAST	0.	0.	0.	4.	81.	100.	91.	66.	34.	32.	28.	21.	12.	2.	0.	0.	0.	471.	79.	108.	57.	70.				
SOUTHEAST	0.	0.	0.	4.	89.	128.	140.	134.	115.	86.	51.	21.	12.	2.	0.	0.	0.	782.	102.	149.	67.	88.				
HORIZ.	0.	0.	0.	3.	33.	67.	94.	111.	117.	111.	94.	67.	33.	3.	0.	0.	0.	733.	99.	143.	66.	85.				

MONTH	11	HO	1041.	TOD	31.	TOT	29.	KT	.352	KD	.181												
ORIENTATION	4	5	6	7	8	9	10	11	12	HOURLY SOLAR RADIATION				16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
										13	14	15	KT							SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	13.	57.	84.	100.	105.	100.	84.	57.	13.	0.	0.	0.	0.	612.	84.	127.	49.	65.	
SOUTHWEST	0.	0.	0.	0.	4.	14.	38.	62.	81.	92.	91.	73.	20.	0.	0.	0.	0.	474.	72.	105.	44.	57.	
WEST	0.	0.	0.	0.	4.	11.	18.	22.	23.	43.	55.	53.	17.	0.	0.	0.	0.	246.	52.	70.	37.	44.	
NORTHWEST	0.	0.	0.	0.	4.	11.	18.	22.	23.	22.	18.	11.	6.	0.	0.	0.	0.	134.	43.	52.	34.	37.	
NORTH	0.	0.	0.	0.	4.	11.	18.	22.	23.	22.	18.	11.	4.	0.	0.	0.	0.	131.	43.	52.	33.	37.	
NORTHEAST	0.	0.	0.	0.	6.	11.	18.	22.	23.	22.	18.	11.	4.	0.	0.	0.	0.	134.	43.	52.	34.	37.	
EAST	0.	0.	0.	0.	17.	53.	55.	43.	23.	22.	18.	11.	4.	0.	0.	0.	0.	246.	52.	70.	37.	44.	
SOUTHEAST	0.	0.	0.	0.	20.	73.	91.	92.	81.	62.	38.	14.	4.	0.	0.	0.	0.	474.	72.	105.	44.	57.	
HORIZ.	0.	0.	0.	0.	7.	30.	50.	63.	67.	63.	50.	30.	7.	0.	0.	0.	0.	367.	63.	89.	41.	51.	

MONTH	12	HO	836.	TOD	17.	TOT	15.	KT	.470	KD	.186																
ORIENTATION												HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20										
SOUTH	0.	0.	0.	0.	1.	77.	128.	155.	164.	155.	128.	77.	1.	0.	0.	0.	0.	886.	99.	166.	43.	66.					
SOUTHWEST	0.	0.	0.	0.	1.	15.	53.	91.	122.	140.	137.	99.	2.	0.	0.	0.	0.	661.	78.	128.	36.	53.					
WEST	0.	0.	0.	0.	1.	9.	16.	21.	22.	55.	76.	68.	2.	0.	0.	0.	0.	271.	42.	62.	23.	30.					
NORTHWEST	0.	0.	0.	0.	1.	9.	16.	21.	22.	21.	16.	9.	1.	0.	0.	0.	0.	117.	28.	36.	18.	21.					
NORTH	0.	0.	0.	0.	1.	9.	16.	21.	22.	21.	16.	9.	1.	0.	0.	0.	0.	117.	28.	36.	18.	21.					
NORTHEAST	0.	0.	0.	0.	1.	9.	16.	21.	22.	21.	16.	9.	1.	0.	0.	0.	0.	117.	28.	36.	18.	21.					
EAST	0.	0.	0.	0.	2.	68.	76.	55.	22.	21.	16.	9.	1.	0.	0.	0.	0.	271.	42.	62.	23.	30.					
SOUTHEAST	0.	0.	0.	0.	2.	99.	137.	140.	122.	91.	53.	15.	1.	0.	0.	0.	0.	661.	78.	128.	36.	53.					
HORIZ.	0.	0.	0.	0.	2.	27.	55.	73.	79.	73.	55.	27.	2.	0.	0.	0.	0.	392.	53.	83.	27.	37.					

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	101.	114.	117.	94.	102.	105.	118.	128.	132.	117.	84.	99.	109.
SOUTHWEST	79.	93.	106.	96.	109.	112.	125.	129.	123.	102.	72.	78.	102.
WEST	43.	59.	83.	89.	108.	114.	125.	122.	106.	79.	52.	42.	85.
NORTHWEST	25.	34.	56.	74.	96.	105.	112.	104.	86.	63.	43.	28.	69.
NORTH	25.	30.	46.	63.	84.	94.	99.	92.	79.	61.	43.	28.	62.
NORTHEAST	25.	34.	56.	74.	96.	105.	112.	104.	86.	63.	43.	28.	69.
EAST	43.	59.	83.	89.	108.	114.	125.	122.	106.	79.	52.	42.	85.
SOUTHEAST	79.	93.	106.	96.	109.	112.	125.	129.	123.	102.	72.	78.	102.
HORIZ.	57.	83.	117.	125.	151.	155.	169.	161.	136.	99.	63.	51.	114.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	175.	196.	193.	140.	140.	139.	157.	175.	189.	175.	127.	166.	164.
SOUTHWEST	135.	158.	173.	144.	152.	151.	170.	178.	175.	149.	105.	128.	152.
WEST	69.	96.	130.	132.	152.	154.	169.	165.	144.	108.	70.	62.	121.
NORTHWEST	36.	51.	82.	104.	130.	138.	146.	130.	109.	78.	52.	36.	91.
NORTH	35.	45.	64.	84.	108.	120.	124.	113.	97.	75.	52.	36.	79.
NORTHEAST	36.	51.	82.	104.	130.	138.	146.	134.	109.	78.	52.	36.	91.
EAST	69.	96.	130.	132.	152.	154.	169.	165.	144.	108.	70.	62.	121.
SOUTHEAST	135.	158.	173.	144.	152.	151.	170.	178.	175.	149.	105.	128.	152.
HORIZ.	94.	140.	193.	196.	227.	226.	246.	235.	198.	143.	89.	83.	172.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	42.	54.	68.	67.	80.	87.	96.	98.	91.	73.	49.	43.	71.
SOUTHWEST	34.	45.	63.	68.	84.	92.	100.	99.	87.	67.	44.	36.	68.
WEST	21.	30.	51.	64.	84.	93.	100.	94.	78.	57.	37.	23.	61.
NORTHWEST	14.	19.	38.	56.	76.	87.	92.	84.	68.	50.	34.	18.	53.
NORTH	14.	18.	33.	49.	69.	80.	84.	77.	65.	49.	33.	18.	49.
NORTHEAST	14.	19.	38.	56.	76.	87.	92.	84.	68.	50.	34.	18.	53.
EAST	21.	30.	51.	64.	84.	93.	100.	94.	78.	57.	37.	23.	61.
SOUTHEAST	34.	45.	63.	68.	84.	92.	100.	99.	87.	67.	44.	36.	68.
HORIZ.	26.	40.	68.	85.	111.	119.	128.	117.	94.	66.	41.	27.	77.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	70.	90.	106.	94.	104.	109.	121.	125.	120.	99.	65.	66.	97.
SOUTHWEST	55.	73.	96.	96.	112.	117.	128.	127.	113.	88.	57.	53.	93.
WEST	30.	46.	75.	89.	111.	119.	128.	119.	97.	70.	44.	30.	80.
NORTHWEST	18.	26.	51.	73.	98.	108.	114.	102.	80.	57.	37.	21.	65.
NORTH	18.	24.	42.	62.	84.	96.	100.	90.	74.	55.	37.	21.	58.
NORTHEAST	18.	26.	51.	73.	98.	108.	114.	102.	80.	57.	37.	21.	65.
EAST	30.	46.	75.	89.	111.	119.	128.	119.	97.	70.	44.	30.	80.
SOUTHEAST	55.	73.	96.	96.	112.	117.	128.	113.	117.	88.	57.	53.	93.
HORIZ.	40.	65.	106.	126.	158.	166.	177.	159.	125.	85.	51.	37.	108.



LOCATION CHARLESTON, S.C. LATITUDE 32 DEGREES 53 MINUTES

MONTH	1	HO	1815.	TOD	54.	TOT	50.	KT	541	KD	.182						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	1.	76.	125.	158.	178.	184.	178.	158.	125.	76.	1.	0.	0.	0.
SOUTHWEST	0.	0.	0.	1.	13.	24.	65.	106.	142.	168.	178.	169.	124.	1.	0.	0.	0.
WEST	0.	0.	0.	1.	13.	24.	33.	39.	41.	82.	114.	128.	107.	1.	0.	0.	0.
NORTHWEST	0.	0.	0.	1.	13.	24.	33.	39.	41.	39.	33.	27.	35.	1.	0.	0.	0.
NORTH	0.	0.	0.	1.	13.	24.	33.	39.	41.	39.	33.	24.	13.	1.	0.	0.	0.
NORTHEAST	0.	0.	0.	1.	35.	27.	33.	39.	41.	39.	33.	24.	13.	1.	0.	0.	0.
EAST	0.	0.	0.	1.	107.	128.	114.	82.	41.	39.	33.	24.	13.	1.	0.	0.	0.
SOUTHEAST	0.	0.	0.	1.	124.	169.	178.	168.	142.	106.	65.	24.	13.	1.	0.	0.	0.
HORIZ.	0.	0.	0.	2.	42.	89.	127.	151.	159.	151.	127.	89.	42.	2.	0.	0.	0.

MONTH	2	HO	2332.	TOD	55.	TOT	52.	KT	521	KD	185						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	23.	73.	111.	139.	156.	162.	156.	139.	111.	73.	23.	0.	0.
SOUTHWEST	0.	0.	0.	0.	6.	20.	32.	55.	94.	129.	153.	165.	161.	134.	57.	0.	0.
WEST	0.	0.	0.	0.	6.	20.	32.	41.	46.	48.	88.	119.	136.	128.	61.	0.	0.
NORTHWEST	0.	0.	0.	0.	6.	20.	32.	41.	46.	48.	46.	41.	49.	59.	33.	0.	0.
NORTH	0.	0.	0.	0.	6.	20.	32.	41.	46.	48.	46.	41.	32.	20.	6.	0.	0.
NORTHEAST	0.	0.	0.	0.	33.	59.	49.	41.	48.	48.	46.	41.	32.	20.	6.	0.	0.
EAST	0.	0.	0.	0.	61.	128.	136.	119.	88.	48.	46.	41.	32.	20.	6.	0.	0.
SOUTHEAST	0.	0.	0.	0.	57.	134.	161.	165.	153.	129.	94.	55.	32.	20.	6.	0.	0.
HORIZ.	0.	0.	0.	0.	16.	66.	113.	150.	173.	181.	173.	150.	113.	66.	16.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS																	
SATGS																	
SAG/ALL DAY SATGS																	
SATGS																	

MONTH	3	HO	2869.	TOD	61.	TOT	57.	KT	491	KD	.188						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	25.	59.	89.	113.	128.	133.	128.	113.	89.	59.	25.	0.	0.	0.
SOUTHWEST	0.	0.	0.	13.	26.	38.	47.	79.	110.	133.	144.	142.	124.	81.	0.	0.	0.
WEST	0.	0.	0.	13.	26.	38.	47.	53.	55.	90.	118.	134.	132.	97.	0.	0.	0.
NORTHWEST	0.	0.	0.	13.	26.	38.	47.	53.	55.	53.	50.	69.	78.	64.	0.	0.	0.
NORTH	0.	0.	0.	13.	26.	38.	47.	53.	55.	53.	47.	38.	26.	13.	0.	0.	0.
NORTHEAST	0.	0.	0.	64.	78.	69.	50.	53.	55.	53.	47.	38.	26.	13.	0.	0.	0.
EAST	0.	0.	0.	97.	132.	134.	118.	90.	55.	53.	47.	38.	26.	13.	0.	0.	0.
SOUTHEAST	0.	0.	0.	81.	124.	142.	144.	133.	110.	79.	47.	38.	26.	13.	0.	0.	0.
HORIZ.	0.	0.	0.	38.	87.	131.	165.	186.	194.	186.	165.	131.	87.	38.	0.	0.	0.

LOCATION CHAPLESTON, S.C. LATITUDE 32 DEGREES 53 MINUTES

MONTH	4	HO	3354.	TOD	6A.	TOT	64.	KT	.584	KD	.176						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	6.	19.	48.	81.	108.	125.	131.	125.	108.	81.	48.	19.	6.	0.	0.
SOUTHWEST	0.	0.	6.	19.	33.	45.	54.	71.	10.	140.	157.	159.	144.	106.	33.	0.	0.
WEST	0.	0.	6.	19.	33.	45.	54.	59.	61.	108.	146.	170.	174.	147.	52.	0.	0.
NORTHWEST	0.	0.	6.	19.	33.	45.	54.	59.	61.	59.	81.	107.	122.	113.	44.	0.	0.
NORTH	0.	0.	14.	24.	33.	45.	54.	59.	61.	59.	54.	45.	33.	24.	14.	0.	0.
NORTHEAST	0.	0.	44.	113.	122.	107.	81.	59.	61.	59.	54.	45.	33.	19.	6.	0.	0.
EAST	0.	0.	52.	147.	174.	170.	146.	108.	61.	59.	54.	45.	33.	10.	6.	0.	0.
SOUTHEAST	0.	0.	33.	106.	144.	159.	157.	140.	110.	71.	54.	45.	33.	19.	6.	0.	0.
HORIZ.	0.	0.	14.	69.	127.	179.	219.	244.	253.	244.	219.	179.	127.	69.	14.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SAT6S																	
SAG/ALL DAY SAT6S																	

MONTH	5	HO	3631.	TOD	75.	TOT	71.	KT	.574	KD	.178							
ORIENTATION	4	5	6	7	8	9	10	11	12	HOURLY SOLAR RADIATION				16	17	18	19	20
										13	14	15	16					
SOUTH	0.	0.	10.	23.	36.	59.	83.	99.	104.	99.	83.	59.	36.	23.	10.	0.	0.	0.
SOUTHWEST	0.	0.	10.	23.	36.	47.	56.	61.	62.	119.	136.	138.	126.	97.	47.	0.	0.	0.
WEST	0.	0.	10.	23.	36.	47.	56.	61.	63.	106.	141.	164.	169.	149.	86.	0.	0.	0.
NORTHWEST	0.	0.	10.	23.	36.	47.	56.	61.	63.	66.	97.	121.	134.	128.	80.	0.	0.	0.
NORTH	0.	0.	33.	45.	42.	47.	56.	61.	63.	61.	56.	47.	42.	45.	33.	0.	0.	0.
NORTHEAST	0.	0.	80.	128.	134.	121.	97.	66.	63.	61.	56.	47.	36.	23.	10.	0.	0.	0.
EAST	0.	0.	86.	149.	169.	164.	141.	106.	63.	61.	56.	47.	36.	23.	10.	0.	0.	0.
SOUTHEAST	0.	0.	47.	97.	126.	138.	136.	110.	92.	61.	56.	47.	36.	23.	10.	0.	0.	0.
HORIZ.	0.	0.	29.	84.	139.	188.	225.	249.	257.	249.	225.	188.	139.	84.	29.	0.	0.	0.
DAILY TOTAL RADIATION																		
SAG/DAYTIME SAT6S SAT6S SAT6S SAT6S																		
SAG/ALL DAY SAT6S SAT6S SAT6S SAT6S																		

MONTH	6	HO	3724.	TOD	81.	TOT	78.	KT	.567	KD	.170						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	1.	12.	25.	37.	51.	74.	88.	93.	88.	74.	51.	37.	25.	12.	1.	0.
SOUTHWEST	0.	1.	12.	25.	37.	48.	56.	61.	64.	111.	126.	120.	117.	91.	48.	1.	0.
WEST	0.	1.	12.	25.	37.	48.	56.	61.	63.	104.	138.	159.	164.	146.	92.	1.	0.
NORTHWEST	0.	1.	12.	25.	37.	48.	56.	61.	63.	73.	102.	124.	136.	131.	89.	1.	0.
NORTH	0.	1.	41.	53.	51.	48.	56.	61.	63.	61.	56.	48.	51.	53.	41.	1.	0.
NORTHEAST	0.	1.	89.	131.	136.	124.	102.	73.	63.	61.	56.	48.	37.	25.	12.	1.	0.
EAST	0.	1.	92.	146.	164.	159.	138.	104.	63.	61.	56.	48.	37.	25.	12.	1.	0.
SOUTHEAST	0.	1.	48.	91.	117.	129.	126.	111.	84.	61.	56.	48.	37.	25.	12.	1.	0.
HORIZ.	0.	1.	35.	89.	142.	189.	225.	247.	255.	247.	225.	189.	142.	89.	35.	1.	0.
													</				

LOCATION CHARLESTON, S.C. LATITUDE 32 DEGRFS 53 MINUTES

MONTH	7	H0	3626.	T07	A3.	TOT	80.	KT	.454	KT	.186
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ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	10.	22.	34.	52.	71.	82.	86.	82.	71.	52.	34.	22.	10.	0.	0.	630.	120.	149.	102.	118.
SOUTHWEST	0.	0.	10.	22.	34.	44.	52.	57.	78.	96.	106.	106.	94.	71.	34.	0.	0.	806.	131.	157.	108.	129.
WEST	0.	0.	10.	22.	34.	44.	52.	57.	59.	81.	110.	123.	123.	106.	59.	0.	0.	889.	136.	176.	110.	134.
NORTHWEST	0.	0.	10.	22.	34.	44.	52.	57.	59.	61.	80.	94.	100.	92.	56.	0.	0.	763.	128.	153.	106.	126.
NORTH	0.	0.	25.	37.	38.	44.	52.	57.	59.	57.	52.	44.	38.	37.	25.	0.	0.	569.	117.	142.	100.	114.
NORTHEAST	0.	0.	56.	92.	100.	94.	80.	61.	59.	57.	52.	44.	34.	22.	10.	0.	0.	763.	128.	163.	106.	126.
EAST	0.	0.	59.	106.	123.	123.	110.	88.	59.	57.	52.	44.	34.	22.	10.	0.	0.	889.	136.	176.	110.	134.
SOUTHEAST	0.	0.	34.	71.	94.	106.	106.	96.	78.	57.	52.	44.	34.	22.	10.	0.	0.	806.	131.	167.	108.	129.
HORIZ.	0.	0.	25.	68.	110.	148.	177.	195.	201.	195.	177.	148.	110.	68.	25.	0.	0.	1645.	180.	255.	136.	180.

MONTH	B	H0	3328.	T0D	82.	T0T	80.	KT	.569	KT	.178
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ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20	SAT6S	SAT6D	SAT6S	SAT6D
SOUTH	0.	0.	6.	19.	47.	79.	104.	121.	127.	121.	104.	79.	47.	19.	6.	0.	0.	878.	137.	180.	110.	133.
SOUTHWEST	0.	0.	6.	19.	32.	44.	53.	70.	107.	136.	152.	153.	136.	99.	28.	0.	0.	1035.	147.	197.	115.	142.
WEST	0.	0.	6.	19.	32.	44.	53.	59.	61.	105.	141.	163.	165.	137.	44.	0.	0.	1030.	147.	197.	115.	142.
NORTHWEST	0.	0.	6.	19.	32.	44.	53.	59.	61.	59.	79.	104.	116.	105.	38.	0.	0.	775.	131.	168.	106.	126.
NORTH	0.	0.	13.	24.	32.	44.	53.	59.	61.	59.	53.	44.	32.	24.	13.	0.	0.	510.	114.	139.	97.	110.
NORTHEAST	0.	0.	38.	105.	116.	104.	79.	59.	61.	59.	53.	44.	32.	19.	6.	0.	0.	775.	131.	168.	106.	126.
EAST	0.	0.	44.	137.	165.	163.	141.	105.	61.	59.	53.	44.	32.	19.	6.	0.	0.	1030.	147.	197.	115.	142.
SOUTHEAST	0.	0.	28.	136.	153.	152.	136.	107.	70.	53.	44.	32.	19.	6.	0.	0.	0.	1035.	147.	197.	115.	142.
HORIZ.	0.	0.	13.	66.	123.	173.	212.	237.	246.	237.	212.	173.	123.	66.	13.	0.	0.	1894.	201.	293.	144.	194.

	MONTH	9	H0	2851.	TOD	79.	TOT	76.	KT	.525	KD	.185
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ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	25.	61.	95.	121.	137.	143.	137.	121.	95.	61.	25.	0.	0.	0.	1020.	149.	202.	111.	138.
SOUTHWEST	0.	0.	0.	13.	26.	38.	47.	83.	117.	142.	155.	153.	133.	84.	0.	0.	0.	992.	147.	198.	110.	136.
WEST	0.	0.	0.	13.	26.	38.	47.	53.	55.	95.	127.	145.	142.	101.	0.	0.	0.	843.	136.	180.	105.	127.
NORTHWEST	0.	0.	0.	13.	26.	38.	47.	53.	55.	53.	52.	74.	83.	67.	0.	0.	0.	562.	117.	147.	96.	110.
NORTH	0.	0.	0.	13.	26.	38.	47.	53.	55.	53.	47.	38.	26.	13.	0.	0.	0.	411.	107.	129.	90.	101.
NORTHEAST	0.	0.	0.	67.	83.	74.	52.	53.	55.	53.	47.	38.	26.	13.	0.	0.	0.	562.	117.	147.	96.	110.
EAST	0.	0.	0.	101.	142.	145.	127.	95.	55.	53.	47.	38.	26.	13.	0.	0.	0.	843.	136.	180.	105.	127.
SOUTHEAST	0.	0.	0.	84.	133.	153.	155.	142.	117.	83.	47.	38.	26.	13.	0.	0.	0.	992.	147.	198.	110.	136.
HORIZ.	0.	0.	0.	38.	91.	139.	176.	199.	207.	199.	176.	139.	91.	38.	0.	0.	0.	1495.	181.	259.	127.	167.

LOCATION		CHARLESTON, S.C.		LATITUDE		32 DEGREES		53 MINUTES								
MONTH	10	HO	2298.	TOD	70.	TOT	66.	KT	.554	KD	.180					
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	22.	77.	119.	150.	169.	175.	169.	150.	119.	77.	22.	0.	0.
SOUTHWEST	0.	0.	0.	6.	19.	31.	57.	100.	138.	166.	179.	174.	143.	54.	0.	0.
WEST	0.	0.	0.	6.	19.	31.	41.	46.	48.	93.	127.	145.	136.	58.	0.	0.
NORTHWEST	0.	0.	0.	6.	19.	31.	41.	46.	48.	46.	41.	50.	61.	31.	0.	0.
NORTH	0.	0.	0.	6.	19.	31.	41.	46.	48.	46.	41.	31.	19.	6.	0.	0.
NORTHEAST	0.	0.	0.	31.	61.	50.	41.	46.	48.	46.	41.	31.	19.	6.	0.	0.
EAST	0.	0.	0.	58.	136.	145.	127.	93.	48.	46.	41.	31.	19.	6.	0.	0.
SOUTHEAST	0.	0.	0.	54.	143.	174.	179.	166.	138.	100.	57.	31.	19.	6.	0.	0.
HORIZ.	0.	0.	0.	15.	68.	118.	158.	183.	191.	183.	158.	118.	68.	15.	0.	0.
DAILY TOTAL RADIATION	1250.															
SAG/DAYTIME SATGS	157.															
SAG/ALL DAY SATGS	139.															
MONTH 11	HO	1802.	TOD	60.	TOT	56.	KT	.539	KD	.183						
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	1.	74.	124.	157.	177.	183.	177.	157.	124.	74.	1.	0.	0.
SOUTHWEST	0.	0.	0.	1.	13.	24.	64.	106.	142.	167.	177.	167.	120.	1.	0.	0.
WEST	0.	0.	0.	1.	13.	24.	33.	39.	41.	82.	113.	126.	104.	1.	0.	0.
NORTHWEST	0.	0.	0.	1.	13.	24.	33.	39.	41.	39.	33.	26.	34.	1.	0.	0.
NORTH	0.	0.	0.	1.	13.	24.	33.	39.	41.	39.	33.	24.	13.	1.	0.	0.
NORTHEAST	0.	0.	0.	1.	34.	26.	33.	39.	41.	39.	33.	24.	13.	1.	0.	0.
EAST	0.	0.	0.	1.	104.	126.	113.	82.	41.	39.	33.	24.	13.	1.	0.	0.
SOUTHEAST	0.	0.	0.	1.	120.	167.	177.	167.	142.	106.	64.	24.	13.	1.	0.	0.
HORIZ.	0.	0.	0.	2.	41.	88.	126.	150.	158.	150.	126.	88.	41.	2.	0.	0.
DAILY TOTAL RADIATION	1247.															
SAG/DAYTIME SATGS	154.															
SAG/ALL DAY SATGS	129.															
MONTH 12	HO	1609.	TOD	54.	TOT	50.	KT	.586	KD	.176						
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	78.	141.	180.	203.	211.	203.	180.	141.	78.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	10.	26.	73.	120.	160.	189.	200.	186.	123.	0.	0.	0.
WEST	0.	0.	0.	0.	10.	22.	31.	36.	38.	85.	120.	134.	102.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	10.	22.	31.	36.	38.	76.	31.	22.	27.	0.	0.	0.
NORTH	0.	0.	0.	0.	10.	22.	31.	36.	38.	36.	31.	22.	10.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	27.	22.	31.	36.	38.	36.	31.	22.	10.	0.	0.	0.
EAST	0.	0.	0.	0.	102.	134.	120.	85.	78.	36.	31.	22.	10.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	123.	186.	200.	189.	160.	120.	73.	26.	10.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	33.	84.	124.	151.	160.	151.	124.	84.	33.	0.	0.	0.
DAILY TOTAL RADIATION	1416.															
SAG/DAYTIME SATGS	165.															
SAG/ALL DAY SATGS	133.															



LOCATION	CHARLESTON, S.C.		LATITUDE 32 DEGREES 53 MINUTES		ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)												ANNUAL AVERAGE
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC					ANNUAL AVERAGE
SOUTH	149.	136.	122.	121.	118.	120.	120.	137.	149.	157.	154.	165.					137.
SOUTHWEST	128.	125.	121.	131.	133.	136.	131.	147.	147.	144.	134.	139.					135.
WEST	98.	106.	112.	131.	141.	145.	136.	147.	136.	122.	103.	99.					123.
NORTHWEST	75.	84.	96.	115.	129.	136.	128.	131.	117.	99.	81.	74.					106.
NORTH	73.	79.	87.	98.	112.	121.	117.	114.	107.	93.	80.	72.					96.
NORTHEAST	75.	84.	96.	115.	129.	136.	128.	131.	117.	99.	81.	74.					106.
EAST	98.	106.	112.	131.	141.	145.	136.	147.	136.	122.	103.	99.					123.
SOUTHEAST	128.	125.	121.	131.	133.	136.	131.	147.	147.	144.	134.	139.					135.
HORIZ.	128.	140.	151.	183.	198.	203.	180.	201.	181.	159.	133.	128.					165.
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)																	
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC					ANNUAL AVERAGE
SOUTH	226.	202.	172.	165.	151.	149.	149.	180.	202.	228.	231.	255.					193.
SOUTHWEST	190.	182.	170.	183.	178.	178.	167.	197.	198.	205.	195.	209.					188.
WEST	134.	147.	154.	183.	191.	194.	176.	197.	180.	165.	139.	136.					166.
NORTHWEST	93.	108.	124.	154.	171.	179.	163.	168.	147.	123.	99.	90.					135.
NORTH	90.	98.	108.	123.	141.	151.	142.	139.	129.	112.	96.	87.					118.
NORTHEAST	93.	108.	124.	154.	171.	179.	163.	168.	147.	123.	99.	90.					135.
EAST	134.	147.	154.	183.	191.	194.	176.	197.	180.	165.	139.	136.					166.
SOUTHEAST	190.	182.	170.	183.	178.	178.	167.	197.	198.	205.	195.	209.					188.
HORIZ.	188.	209.	224.	278.	293.	297.	255.	293.	259.	231.	193.	188.					242.
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)																	
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC					ANNUAL AVERAGE
SOUTH	91.	89.	88.	93.	96.	101.	102.	110.	111.	107.	96.	96.					98.
SOUTHWEST	82.	84.	87.	99.	105.	110.	108.	115.	110.	101.	88.	85.					98.
WEST	69.	75.	83.	99.	109.	116.	110.	115.	105.	91.	75.	69.					93.
NORTHWEST	60.	65.	75.	90.	103.	111.	106.	106.	96.	80.	65.	59.					85.
NORTH	59.	63.	70.	81.	93.	101.	100.	97.	90.	77.	65.	58.					79.
NORTHEAST	60.	65.	75.	90.	103.	111.	106.	106.	96.	80.	65.	59.					85.
EAST	69.	75.	83.	99.	109.	116.	110.	115.	105.	91.	75.	69.					93.
SOUTHEAST	82.	84.	87.	99.	105.	110.	108.	115.	110.	101.	88.	85.					98.
HORIZ.	82.	91.	102.	127.	143.	150.	136.	144.	127.	107.	87.	81.					115.
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)																	
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC					ANNUAL AVERAGE
SOUTH	124.	120.	113.	117.	115.	118.	118.	133.	138.	139.	129.	133.					125.
SOUTHWEST	108.	111.	112.	127.	131.	135.	129.	142.	136.	129.	114.	114.					124.
WEST	84.	94.	104.	127.	138.	145.	134.	142.	127.	110.	90.	84.					115.
NORTHWEST	67.	76.	89.	111.	127.	136.	126.	126.	110.	91.	73.	65.					100.
NORTH	66.	72.	81.	94.	110.	119.	114.	110.	101.	86.	71.	64.					91.
NORTHEAST	67.	76.	89.	111.	127.	136.	126.	126.	110.	91.	73.	65.					100.
EAST	84.	94.	104.	127.	138.	145.	134.	142.	127.	110.	90.	84.					115.
SOUTHEAST	108.	111.	112.	127.	131.	135.	129.	142.	136.	129.	114.	114.					124.
HORIZ.	107.	123.	139.	178.	197.	205.	180.	194.	167.	141.	113.	105.					154.

LOCATION		CLEVELAND, OHIO		LATITUDE 41 DEGREES 23 MINUTES																	
MONTH	1	HO	1353.	TOD	31.	TOT	28.	KT	.361	KD	.181										
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	0.	0.	30.	67.	90.	104.	109.	104.	90.	67.	30.	0.	0.	0.	0.	690.	87.	132.
SOUTHWEST	0.	0.	0.	0.	0.	7.	17.	42.	66.	85.	97.	99.	86.	47.	0.	0.	0.	0.	546.	75.	111.
WEST	0.	0.	0.	0.	0.	7.	16.	22.	27.	28.	49.	63.	64.	40.	0.	0.	0.	0.	316.	56.	77.
NORTHWEST	0.	0.	0.	0.	0.	7.	16.	22.	27.	28.	27.	22.	16.	14.	0.	0.	0.	0.	179.	45.	57.
NORTH	0.	0.	0.	0.	0.	7.	16.	22.	27.	28.	27.	22.	16.	7.	0.	0.	0.	0.	172.	45.	56.
NORTHEAST	0.	0.	0.	0.	0.	14.	16.	22.	27.	28.	27.	22.	16.	7.	0.	0.	0.	0.	179.	45.	57.
EAST	0.	0.	0.	0.	0.	40.	64.	63.	49.	28.	27.	22.	16.	7.	0.	0.	0.	0.	316.	56.	77.
SOUTHEAST	0.	0.	0.	0.	0.	47.	86.	99.	97.	85.	66.	42.	17.	7.	0.	0.	0.	0.	546.	75.	111.
HORIZ.	0.	0.	0.	0.	0.	16.	43.	65.	79.	84.	79.	65.	43.	16.	0.	0.	0.	0.	489.	70.	103.
MONTH	2	HO	1926.	TOD	31.	TOT	29.	KT		.383	KD	.182									
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	0.	0.	9.	47.	76.	97.	111.	115.	111.	97.	76.	47.	9.	0.	0.	793.	88.	134.
SOUTHWEST	0.	0.	0.	0.	0.	4.	14.	23.	45.	71.	92.	106.	111.	104.	80.	18.	0.	0.	667.	79.	118.
WEST	0.	0.	0.	0.	0.	4.	14.	23.	31.	35.	37.	60.	77.	85.	74.	19.	0.	0.	459.	64.	91.
NORTHWEST	0.	0.	0.	0.	0.	4.	14.	23.	31.	35.	37.	35.	31.	30.	34.	11.	0.	0.	283.	51.	68.
NORTH	0.	0.	0.	0.	0.	4.	14.	23.	31.	35.	37.	35.	31.	23.	14.	4.	0.	0.	250.	49.	63.
NORTHEAST	0.	0.	0.	0.	0.	11.	34.	30.	31.	35.	37.	35.	31.	23.	14.	4.	0.	0.	283.	51.	68.
EAST	0.	0.	0.	0.	0.	19.	74.	85.	77.	60.	37.	35.	31.	23.	14.	4.	0.	0.	459.	64.	91.
SOUTHEAST	0.	0.	0.	0.	0.	18.	80.	104.	111.	106.	92.	71.	45.	23.	14.	4.	0.	0.	667.	79.	118.
HORIZ.	0.	0.	0.	0.	0.	7.	38.	68.	92.	107.	112.	107.	92.	68.	38.	7.	0.	0.	738.	84.	127.
MONTH	3	HO	2568.	TOD	39.	TOT	37.	KT		.497	KD	.188									
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	0.	0.	26.	64.	98.	125.	142.	148.	142.	125.	98.	64.	26.	0.	0.	1057.	107.	162.
SOUTHWEST	0.	0.	0.	0.	0.	12.	24.	34.	49.	87.	119.	142.	152.	148.	127.	79.	0.	0.	973.	102.	152.
WEST	0.	0.	0.	0.	0.	12.	24.	34.	42.	47.	49.	86.	115.	132.	130.	93.	0.	0.	764.	88.	128.
NORTHWEST	0.	0.	0.	0.	0.	12.	24.	34.	42.	47.	49.	47.	42.	58.	70.	59.	0.	0.	486.	70.	96.
NORTH	0.	0.	0.	0.	0.	12.	24.	34.	42.	47.	48.	47.	42.	34.	24.	12.	0.	0.	368.	63.	82.
NORTHEAST	0.	0.	0.	0.	0.	59.	70.	58.	42.	47.	49.	47.	42.	34.	24.	12.	0.	0.	486.	70.	96.
EAST	0.	0.	0.	0.	0.	93.	130.	132.	115.	86.	49.	47.	42.	34.	24.	12.	0.	0.	764.	88.	128.
SOUTHEAST	0.	0.	0.	0.	0.	79.	127.	148.	152.	142.	119.	87.	49.	34.	24.	12.	0.	0.	973.	102.	152.
HORIZ.	0.	0.	0.	0.	0.	33.	78.	118.	150.	170.	176.	170.	150.	118.	78.	33.	0.	0.	1275.	121.	187.

LOCATION CLEVELAND, OHIO LATITUDE 41 DEGREES 23 MINUTES

MONTH	4	HO	3207.	TOD	50.	TOT	47.	HOURLY SOLAR RADIATION										KD	.186	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
								4	5	6	7	8	9	10	11	12	13				14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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LOCATION CLEVELAND, OHIO LATITUDE 41 DEGREES 23 MINUTES

MONTH	7	HO	3613.	TOD	77.	TOT	74.	KT	.571	KD	.178						
HOURLY SOLAR RADIATION																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	2.	13.	25.	44.	77.	104.	121.	127.	121.	104.	77.	44.	25.	13.	2.	0.
SOUTHWEST	0.	2.	13.	25.	36.	46.	54.	71.	107.	134.	149.	150.	135.	105.	58.	3.	0.
WEST	0.	2.	13.	25.	36.	46.	54.	58.	60.	103.	139.	162.	168.	152.	102.	5.	0.
NORTHWEST	0.	2.	13.	25.	36.	46.	54.	59.	60.	58.	79.	106.	124.	125.	93.	5.	0.
NORTH	0.	4.	38.	39.	36.	46.	54.	58.	60.	58.	54.	46.	36.	39.	38.	4.	0.
NORTHEAST	0.	5.	93.	125.	124.	106.	79.	58.	60.	58.	54.	46.	36.	25.	13.	2.	0.
EAST	0.	5.	102.	152.	168.	162.	139.	103.	60.	58.	54.	46.	36.	25.	13.	2.	0.
SOUTHEAST	0.	3.	58.	105.	135.	150.	149.	134.	107.	71.	54.	46.	36.	25.	13.	2.	0.
HORIZ.	0.	4.	39.	90.	139.	183.	216.	238.	245.	238.	216.	183.	139.	90.	39.	4.	0.
DAILY TOTAL RADIATION												896.	128.	166.	104.	128.	
SAG/DAYTIME SAT6S												1088.	138.	185.	111.	139.	
SAG/ALL DAY SAT6S												1125.	140.	189.	112.	142.	
SAT6S												885.	127.	165.	104.	127.	
SAT6S												609.	111.	138.	95.	111.	
SAT6S												885.	127.	165.	104.	127.	
SAT6S												1125.	140.	189.	112.	142.	
SAT6S												1088.	138.	185.	111.	139.	
SAT6S												2063.	193.	283.	144.	194.	

DAILY TOTAL RADIATION

SAG/DAYTIME SAT6S SAT6D SAG/ALL DAY SAT6S SAT6D

SOUTH	896.	128.	166.	104.	128.
SOUTHWEST	1088.	138.	185.	111.	139.
WEST	1125.	140.	189.	112.	142.
NORTHWEST	885.	127.	165.	104.	127.
NORTH	609.	111.	138.	95.	111.
NORTHEAST	885.	127.	165.	104.	127.
EAST	1125.	140.	189.	112.	142.
SOUTHEAST	1088.	138.	185.	111.	139.
HORIZ.	2063.	193.	283.	144.	198.

MONTH	8	HO	3184.	TOD	75.	TOT	72.	KT	559	KD	180
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ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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DAILY TOTAL RADIATION

SAG/DAYTIME SAT6S SAT6D SAG/ALL DAY SAT6S SAT6D

SOUTH	1019.	137.	185.	107.	133.
SOUTHWEST	1101.	142.	194.	110.	138.
WEST	1012.	137.	184.	106.	133.
NORTHWEST	720.	119.	153.	97.	115.
NORTH	481.	104.	127.	88.	101.
NORTHEAST	720.	119.	153.	97.	115.
EAST	1012.	137.	184.	106.	133.
SOUTHEAST	1101.	142.	194.	110.	138.
HORIZ.	1781.	184.	267.	133.	179.

MONTH	9	HO	2557.	TOD	68.	TOT	65.	KT	524	KD	185
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ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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DAILY TOTAL RADIATION

SAG/DAYTIME SAT6S SAT6D SAG/ALL DAY SAT6S SAT6D

SOUTH	1112.	144.	202.	104.	133.
SOUTHWEST	1020.	138.	191.	100.	127.
WEST	793.	122.	164.	93.	113.
NORTHWEST	494.	102.	128.	82.	95.
NORTH	369.	94.	113.	78.	88.
NORTHEAST	494.	102.	128.	82.	95.
EAST	793.	122.	164.	93.	113.
SOUTHEAST	1020.	138.	191.	100.	127.
HORIZ.	1339.	160.	229.	111.	146.



LOCATION CLEVELAND, OHIO LATITUDE 41 DEGREES 23 MINUTES

MONTH	10	H0	1892.	TOD	57.	TOT	54.	KT	KT	KD	.188								
ORIENTATION																			
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	0.	0.	0.	9.	62.	104.	134.	153.	160.	153.	134.	104.	62.	9.	0.	0.			
SOUTHWEST	0.	0.	0.	3.	15.	25.	55.	93.	125.	146.	155.	145.	110.	20.	0.	0.			
WEST	0.	0.	0.	3.	15.	25.	33.	38.	40.	76.	104.	116.	102.	21.	0.	0.			
NORTHWEST	0.	0.	0.	3.	15.	25.	33.	38.	40.	38.	33.	34.	43.	12.	0.	0.			
NORTH	0.	0.	0.	3.	15.	25.	33.	38.	40.	38.	33.	25.	15.	3.	0.	0.			
NORTHEAST	0.	0.	0.	12.	43.	34.	33.	38.	40.	38.	33.	25.	15.	3.	0.	0.			
EAST	0.	0.	0.	21.	102.	116.	104.	76.	40.	38.	33.	25.	15.	3.	0.	0.			
SOUTHEAST	0.	0.	0.	20.	110.	145.	155.	146.	125.	93.	55.	25.	15.	3.	0.	0.			
HORIZ.	0.	0.	0.	7.	46.	86.	117.	137.	144.	137.	117.	86.	46.	7.	0.	0.			
DAILY TOTAL RADIATION												1085.	SAG/DAYTIME SATGS SATGD				SAG/ALL DAY SATGS SATG		
												135.	199.	89.				118.	
												892.	121.				174.	83.	106.
												574.	99.				132.	73.	88.
												316.	80.				99.	65.	73.
												271.	77.				93.	63.	70.
												316.	80.				99.	65.	73.
												574.	99.				132.	73.	88.
												892.	121.				174.	83.	106.
												929.	124.				179.	84.	109.

DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGD	SAG/ALL DAY SATGS	ALL DAY SATGD
1085.	135.	199.	89.	118.
892.	121.	174.	83.	106.
574.	99.	132.	73.	88.
316.	80.	99.	65.	73.
271.	77.	93.	63.	70.
316.	80.	99.	65.	73.
574.	99.	132.	73.	88.
892.	121.	174.	83.	106.
929.	124.	179.	84.	109.

MONTH	11	H0	1341.	TOD	44.	TOT	42.	KT	KD	.181							
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	HOURLY SOLAR RADIATION																
SOUTH	0.	0.	0.	0.	27.	63.	86.	100.	104.	100.	86.	63.	27.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	7.	17.	41.	63.	82.	93.	94.	81.	42.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	7.	15.	22.	26.	28.	47.	60.	61.	37.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	7.	15.	22.	26.	28.	26.	22.	15.	13.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	7.	15.	22.	26.	28.	26.	22.	15.	7.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	13.	15.	22.	26.	28.	26.	22.	15.	7.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	37.	61.	60.	47.	28.	26.	22.	15.	7.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	42.	81.	94.	93.	82.	63.	41.	17.	7.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	15.	41.	63.	76.	81.	76.	63.	41.	15.	0.	0.	0.	0.

DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGD	SAG/ALL DAY SATGS	ALL DAY SATGD
657.	97.	141.	63.	80.
520.	86.	120.	58.	72.
303.	69.	89.	51.	59.
175.	58.	70.	47.	52.
169.	58.	69.	47.	52.
175.	58.	70.	47.	52.
303.	69.	89.	51.	59.
520.	86.	120.	58.	72.
471.	82.	113.	57.	69.

MONTH 12	H0 1136.	TOD	33.	TOT	31.	KT	KD	.182									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	18.	65.	93.	109.	114.	109.	93.	65.	18.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	4.	17.	43.	68.	88.	100.	101.	83.	28.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	4.	13.	20.	24.	25.	47.	61.	60.	23.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	4.	13.	20.	24.	25.	24.	20.	13.	7.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	4.	13.	20.	24.	25.	24.	20.	13.	4.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	7.	13.	20.	24.	25.	24.	20.	13.	4.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	23.	60.	61.	47.	25.	24.	20.	13.	4.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	28.	83.	101.	100.	88.	68.	43.	17.	4.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	9.	35.	57.	72.	77.	72.	57.	35.	9.	0.	0.	0.	0.

DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGD	SAG/ALL DAY SATGS	ALL DAY SATGD
686.	91.	139.	53.	71.
531.	78.	115.	48.	62.
276.	56.	76.	40.	47.
149.	46.	56.	36.	40.
146.	45.	55.	36.	39.
149.	46.	56.	36.	40.
276.	56.	76.	40.	47.
531.	78.	115.	48.	62.
422.	69.	98.	44.	56.

LOCATION CLEVELAND, OHIO LATITUDE 41 DEGREES 23 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	87.	88.	107.	99.	111.	118.	128.	137.	144.	135.	97.	91.	112.
SOUTHWEST	75.	79.	102.	103.	121.	130.	138.	142.	138.	121.	86.	78.	110.
WEST	56.	64.	88.	99.	123.	135.	140.	137.	122.	99.	69.	56.	99.
NORTHWEST	45.	51.	70.	87.	111.	124.	127.	119.	102.	80.	58.	46.	85.
NORTH	45.	49.	63.	77.	96.	109.	111.	104.	94.	77.	58.	45.	77.
NORTHEAST	45.	51.	70.	87.	111.	124.	127.	119.	102.	80.	58.	46.	85.
EAST	56.	64.	88.	99.	123.	135.	140.	137.	122.	99.	69.	56.	99.
SOUTHEAST	75.	79.	102.	103.	121.	130.	138.	142.	138.	121.	86.	78.	110.
HORIZ.	70.	84.	121.	136.	173.	188.	193.	184.	160.	124.	82.	69.	132.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	132.	134.	162.	140.	149.	153.	166.	185.	202.	199.	141.	139.	159.
SOUTHWEST	111.	118.	152.	146.	167.	174.	185.	194.	191.	174.	120.	115.	154.
WEST	77.	91.	128.	140.	170.	183.	189.	184.	164.	132.	89.	76.	135.
NORTHWEST	57.	68.	96.	117.	148.	163.	165.	153.	128.	99.	70.	56.	110.
NORTH	56.	63.	82.	98.	122.	137.	138.	127.	113.	93.	69.	55.	96.
NORTHEAST	57.	68.	96.	117.	148.	163.	165.	153.	128.	99.	70.	56.	110.
EAST	77.	91.	128.	140.	170.	183.	189.	184.	164.	132.	89.	76.	135.
SOUTHEAST	111.	118.	152.	146.	167.	174.	185.	194.	191.	174.	120.	115.	154.
HORIZ.	103.	127.	187.	205.	258.	276.	283.	267.	229.	179.	113.	98.	194.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	51.	54.	71.	75.	89.	98.	104.	107.	104.	89.	63.	53.	80.
SOUTHWEST	46.	50.	68.	77.	95.	105.	111.	110.	100.	83.	58.	48.	79.
WEST	39.	43.	61.	75.	96.	108.	112.	106.	93.	73.	51.	40.	75.
NORTHWEST	34.	38.	52.	68.	88.	101.	104.	97.	82.	65.	47.	36.	68.
NORTH	34.	37.	49.	62.	80.	92.	95.	88.	78.	63.	47.	36.	63.
NORTHEAST	34.	38.	52.	68.	88.	101.	104.	97.	82.	65.	47.	36.	68.
EAST	39.	43.	61.	75.	96.	108.	112.	106.	93.	73.	51.	40.	75.
SOUTHEAST	46.	50.	68.	77.	95.	105.	111.	110.	100.	83.	58.	48.	79.
HORIZ.	44.	52.	78.	95.	126.	141.	144.	133.	111.	84.	57.	44.	93.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	69.	75.	98.	97.	112.	120.	128.	133.	133.	118.	80.	71.	103.
SOUTHWEST	60.	67.	93.	101.	124.	133.	139.	138.	127.	106.	72.	62.	102.
WEST	47.	55.	81.	97.	122.	138.	142.	133.	113.	88.	59.	47.	94.
NORTHWEST	39.	45.	65.	85.	111.	126.	127.	115.	95.	73.	52.	40.	81.
NORTH	39.	43.	58.	74.	95.	110.	111.	101.	88.	70.	52.	39.	73.
NORTHEAST	39.	45.	65.	85.	111.	126.	127.	115.	95.	73.	52.	40.	81.
EAST	47.	55.	81.	97.	124.	138.	142.	133.	113.	88.	59.	47.	94.
SOUTHEAST	60.	67.	93.	101.	122.	133.	139.	127.	106.	106.	72.	62.	102.
HORIZ.	57.	72.	111.	134.	178.	197.	198.	179.	146.	109.	69.	56.	125.

LOCATION		COLUMBIA, MISSOURI		LATITUDE		38 DEGREES		57 MINUTES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
MONTH 1		HO 1486.		TOD		32.		TOT		30.		KT		.45A		KD		.186																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
ORIENTATION		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
SOUTH		0.	0.	0.	0.	0.	0.	0.	49.	97.	127.	146.	152.	146.	127.	97.	49.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

LOCATION	COLUMBIA, MISSOURI				LATITUDE 38 DEGREES 57 MINUTES								LONGITUDE 91 DEGREES 18 MINUTES							
MONTH	4	HO	3255.	TOD	58.	TOT	54.	KT	.514	KT	.186									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	0.	0.	7.	20.	52.	83.	107.	123.	129.	123.	107.	83.	52.	20.	7.	0.	0.			
SOUTHWEST	0.	0.	7.	20.	32.	42.	50.	75.	108.	131.	143.	142.	126.	93.	35.	0.	0.			
WEST	0.	0.	7.	20.	32.	42.	50.	56.	57.	95.	125.	144.	146.	124.	54.	0.	0.			
NORTHWEST	0.	0.	7.	20.	32.	42.	50.	56.	57.	56.	63.	86.	99.	94.	46.	0.	0.			
NORTH	0.	0.	15.	20.	32.	42.	50.	56.	57.	56.	50.	42.	32.	20.	15.	0.	0.			
NORTHEAST	0.	0.	46.	94.	99.	86.	63.	56.	57.	56.	50.	42.	32.	20.	7.	0.	0.			
EAST	0.	0.	54.	124.	146.	144.	125.	95.	57.	56.	50.	42.	32.	20.	7.	0.	0.			
SOUTHEAST	0.	0.	35.	93.	126.	142.	143.	131.	108.	75.	50.	42.	32.	20.	7.	0.	0.			
HORIZ.	0.	0.	17.	63.	110.	152.	184.	205.	212.	205.	184.	152.	110.	63.	17.	0.	0.			
		DAILY TOTAL RADIATION																		
		SAT6S SAT6D SAT6S SAT6D SAT6S SAT6D																		
		110. 153. 84. 108.																		
		116. 163. 87. 113.																		
		113. 158. 85. 110.																		
		99. 132. 77. 96.																		
		86. 109. 70. 83.																		
		99. 132. 77. 96.																		
		113. 158. 8. 110.																		
		116. 163. 87. 113.																		
		155. 234. 108. 152.																		
MONTH	5	HO	3626.	TOD	67.	TOT	64.	KT	.559	KT	.180									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	0.	1.	12.	24.	40.	71.	97.	113.	118.	113.	97.	71.	40.	24.	12.	1.	0.			
SOUTHWEST	0.	1.	12.	24.	36.	46.	54.	67.	102.	128.	142.	143.	129.	100.	54.	1.	0.			
WEST	0.	1.	12.	24.	36.	46.	54.	59.	61.	102.	136.	158.	164.	148.	96.	2.	0.			
NORTHWEST	0.	1.	12.	24.	36.	46.	54.	59.	61.	59.	82.	108.	124.	123.	88.	2.	0.			
NORTH	0.	1.	36.	40.	36.	46.	54.	59.	61.	59.	54.	46.	36.	40.	36.	1.	0.			
NORTHEAST	0.	2.	88.	123.	124.	108.	82.	59.	61.	59.	54.	46.	36.	24.	12.	1.	0.			
EAST	0.	2.	96.	148.	164.	158.	136.	102.	61.	59.	54.	46.	36.	24.	12.	1.	0.			
SOUTHEAST	0.	1.	54.	100.	129.	143.	142.	128.	102.	67.	54.	46.	36.	24.	12.	1.	0.			
HORIZ.	0.	2.	36.	87.	137.	180.	214.	236.	243.	236.	214.	180.	137.	87.	36.	2.	0.			
		DAILY TOTAL RADIATION																		
		836. 1041. 1101. 880. 608. 880. 1101. 126. 172. 183. 272. 133. 186.																		
		115. 151. 92. 114.																		
		126. 172. 99. 127.																		
		130. 178. 101. 130.																		
		117. 156. 94. 117.																		
		102. 128. 84. 100.																		
		117. 156. 94. 117.																		
		130. 178. 101. 130.																		
		126. 172. 99. 127.																		
		183. 272. 133. 186.																		
MONTH	6	HO	3758.	TOD	76.	TOT	73.	KT	.566	KT	.179									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	0.	3.	14.	26.	38.	65.	89.	105.	111.	105.	89.	65.	38.	26.	14.	3.	0.			
SOUTHWEST	0.	3.	14.	26.	38.	48.	55.	61.	96.	122.	137.	138.	126.	98.	57.	6.	0.			
WEST	0.	3.	14.	26.	38.	48.	55.	60.	62.	103.	137.	159.	166.	151.	105.	12.	0.			
NORTHWEST	0.	3.	14.	26.	38.	48.	55.	60.	62.	60.	89.	114.	130.	130.	100.	13.	0.			
NORTH	0.	8.	45.	49.	41.	48.	55.	60.	62.	60.	55.	48.	41.	49.	45.	8.	0.			
NORTHEAST	0.	13.	100.	130.	130.	114.	89.	60.	62.	60.	55.	48.	38.	26.	14.	3.	0.			
EAST	0.	12.	105.	151.	166.	159.	137.	103.	62.	60.	55.	48.	38.	26.	14.	3.	0.			
SOUTHEAST	0.	6.	57.	98.	126.	138.	137.	122.	96.	61.	55.	48.	38.	26.	14.	3.	0.			
SORTZ.	0.	6.	44.	94.	144.	187.	221.	242.	249.	242.	221.	187.	144.	94.	44.	6.	0.			
		DAILY TOTAL RADIATION																		
		790. 1026. 1138. 943. 672. 943. 1138. 1026. 790.																		
		120. 154. 100. 121.																		
		133. 177. 108. 135.																		
		139. 188. 112. 142.																		
		128. 169. 105. 130.																		
		113. 142. 96. 113.																		
		128. 169. 105. 130.																		
		139. 188. 112. 142.																		
		133. 177. 108. 135.																		
		194. 285. 146. 201.																		



LOCATION	COLUMBIA, MISSOURI				LATITUDE 38 DEGREES 57 MINUTES																							
MONTH	7	HO	3623.	TOD	81.	TOT	78.	KT	.585	KD	.176																	
ORIENTATION	4	5	6	7	8	9	10	11	12	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME			SAG/ALL DAY		
										13	14	15	16	17	18	19	20	SAT6S	SAT6D	SAT6S	SAT6D		SAT6S	SAT6D				
SOUTH	0.	1.	12.	24.	40.	73.	100.	117.	123.	117.	100.	73.	40.	24.	12.	1.	0.	857.	130.	168.	107.	130.	168.	107.	130.			
SOUTHWEST	0.	1.	12.	24.	36.	47.	55.	67.	105.	133.	149.	150.	136.	105.	56.	2.	0.	1077.	143.	190.	115.	143.	190.	115.	143.			
WEST	0.	1.	12.	24.	36.	47.	55.	60.	61.	106.	143.	167.	173.	155.	100.	2.	0.	1142.	146.	197.	117.	147.	197.	117.	147.			
NORTHWEST	0.	1.	12.	24.	36.	47.	55.	60.	61.	60.	85.	113.	130.	129.	92.	2.	0.	907.	133.	173.	109.	133.	173.	109.	133.			
NORTH	0.	2.	37.	42.	36.	47.	55.	60.	61.	60.	55.	47.	36.	42.	37.	2.	0.	616.	116.	143.	99.	115.	143.	99.	115.			
NORTHEAST	0.	2.	92.	129.	130.	113.	85.	60.	61.	60.	55.	47.	36.	24.	12.	1.	0.	907.	133.	173.	109.	133.	173.	109.	133.			
EAST	0.	2.	100.	155.	173.	167.	143.	106.	61.	60.	55.	47.	36.	24.	12.	1.	0.	1142.	146.	197.	117.	147.	197.	117.	147.			
SOUTHEAST	0.	2.	56.	105.	136.	150.	149.	133.	105.	67.	55.	47.	36.	24.	12.	1.	0.	1077.	143.	190.	115.	143.	190.	115.	143.			
HORIZ.	0.	2.	37.	90.	143.	189.	225.	247.	255.	247.	225.	189.	143.	90.	37.	2.	0.	2119.	202.	295.	150.	206.	295.	150.	206.			
MONTH	8	HO	3232.	TOD	79.	TOT	76.	KT	.588	KD	.176																	
ORIENTATION	4	5	6	7	8	9	10	11	12	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME			SAG/ALL DAY		
										13	14	15	16	17	18	19	20	SAT6S	SAT6D	SAT6S	SAT6D		SAT6S	SAT6D				
SOUTH	0.	0.	7.	19.	56.	93.	122.	141.	147.	141.	122.	93.	56.	19.	7.	0.	0.	1022.	142.	191.	111.	138.	191.	111.	138.			
SOUTHWEST	0.	0.	7.	19.	32.	43.	51.	81.	121.	151.	167.	167.	149.	108.	37.	0.	0.	1134.	149.	203.	115.	145.	203.	115.	145.			
WEST	0.	0.	7.	19.	32.	43.	51.	56.	58.	106.	145.	169.	173.	146.	59.	0.	0.	1063.	145.	195.	113.	140.	195.	113.	140.			
NORTHWEST	0.	0.	7.	19.	32.	43.	51.	56.	58.	56.	67.	97.	114.	109.	50.	0.	0.	760.	126.	162.	102.	122.	162.	102.	122.			
NORTH	0.	0.	15.	20.	32.	43.	51.	56.	58.	56.	51.	43.	32.	20.	15.	0.	0.	493.	110.	133.	93.	106.	133.	93.	106.			
NORTHEAST	0.	0.	50.	109.	114.	97.	67.	56.	58.	56.	51.	43.	32.	19.	7.	0.	0.	760.	126.	162.	102.	122.	162.	102.	122.			
EAST	0.	0.	59.	146.	173.	169.	145.	106.	58.	56.	51.	43.	32.	19.	7.	0.	0.	1063.	145.	195.	113.	140.	195.	113.	140.			
SOUTHEAST	0.	0.	37.	108.	149.	167.	167.	151.	121.	81.	51.	43.	32.	19.	7.	0.	0.	1134.	149.	203.	115.	145.	203.	115.	145.			
HORIZ.	0.	0.	17.	69.	124.	173.	211.	235.	243.	235.	211.	173.	124.	69.	17.	0.	0.	1901.	197.	286.	141.	191.	286.	141.	191.			
MONTH	9	HO	2647.	TOD	72.	TOT	69.	KT	.606	KD	.173																	
ORIENTATION	4	5	6	7	8	9	10	11	12	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME			SAG/ALL DAY		
										13	14	15	16	17	18	19	20	SAT6S	SAT6D	SAT6S	SAT6D		SAT6S	SAT6D				
SOUTH	0.	0.	0.	29.	76.	119.	153.	175.	182.	175.	153.	119.	76.	29.	0.	0.	0.	1289.	160.	227.	113.	147.	227.	113.	147.			
SOUTHWEST	0.	0.	0.	12.	25.	36.	50.	100.	144.	177.	193.	191.	164.	101.	0.	0.	0.	1193.	153.	215.	109.	141.	215.	109.	141.			
WEST	0.	0.	0.	12.	25.	36.	45.	50.	52.	104.	146.	171.	170.	120.	0.	0.	0.	932.	135.	184.	101.	125.	184.	101.	125.			
NORTHWEST	0.	0.	0.	12.	25.	36.	45.	50.	52.	50.	45.	73.	91.	76.	0.	0.	0.	555.	110.	139.	88.	102.	139.	88.	102.			
NORTH	0.	0.	0.	12.	25.	36.	45.	50.	52.	50.	45.	36.	25.	12.	0.	0.	0.	388.	98.	118.	82.	92.	118.	82.	92.			
NORTHEAST	0.	0.	0.	76.	91.	73.	45.	50.	52.	50.	45.	36.	25.	12.	0.	0.	0.	555.	110.	139.	88.	102.	139.	88.	102.			
EAST	0.	0.	0.	120.	170.	171.	146.	104.	52.	50.	45.	36.	25.	12.	0.	0.	0.	932.	135.	184.	101.	125.	184.	101.	125.			
SOUTHEAST	0.	0.	0.	101.	164.	191.	193.	177.	144.	100.	50.	36.	25.	12.	0.	0.	0.	1193.	153.	215.	109.	141.	215.	109.	141.			
HORIZ.	0.	0.	1.	39.	96.	149.	189.	215.	224.	215.	189.	149.	96.	39.	1.	0.	0.	1603.	181.	265.	124.	166.	265.	124.	166.			

LOCATION		COLUMBIA, MISSOURI		LATITUDE 38 DEGREES 57 MINUTES																		
MONTH 10	HO 2012.	TOD 61.	TOT 58.	HOURLY SOLAR RADIATION										KT .562	KD .179	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	0.	14.	77.	124.	159.	181.	188.	191.	159.	124.	77.	14.	0.	0.	0.	1299.	154.	229.	100.	134.
SOUTHWEST	0.	0.	0.	4.	16.	27.	60.	106.	146.	174.	186.	178.	139.	33.	0.	0.	0.	1070.	138.	200.	92.	120.
WEST	0.	0.	0.	4.	16.	27.	36.	42.	43.	89.	125.	143.	129.	35.	0.	0.	0.	691.	111.	151.	80.	98.
NORTHWEST	0.	0.	0.	4.	16.	27.	36.	42.	43.	42.	36.	41.	53.	19.	0.	0.	0.	360.	87.	108.	70.	79.
NORTH	0.	0.	0.	4.	16.	27.	36.	42.	43.	42.	36.	27.	16.	4.	0.	0.	0.	294.	82.	99.	68.	75.
NORTHEAST	0.	0.	0.	19.	53.	41.	36.	42.	43.	42.	36.	27.	16.	4.	0.	0.	0.	360.	87.	108.	70.	79.
EAST	0.	0.	0.	35.	129.	143.	125.	89.	43.	42.	36.	27.	16.	4.	0.	0.	0.	691.	111.	151.	80.	98.
SOUTHEAST	0.	0.	0.	33.	139.	178.	186.	174.	146.	106.	60.	27.	16.	4.	0.	0.	0.	1070.	138.	200.	92.	120.
HORIZ.	0.	0.	0.	9.	56.	104.	142.	166.	175.	166.	142.	104.	56.	9.	0.	0.	0.	1131.	142.	208.	94.	124.
MONTH 11	HO 1475.	TOD 46.	TOT 43.	KT .510										KD .187								
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	0.	0.	55.	111.	147.	168.	176.	168.	147.	111.	55.	0.	0.	0.	0.	1138.	136.	210.	80.	110.
SOUTHWEST	0.	0.	0.	0.	9.	21.	61.	101.	134.	157.	163.	147.	88.	0.	0.	0.	0.	882.	116.	173.	71.	95.
WEST	0.	0.	0.	0.	9.	19.	28.	33.	35.	72.	100.	108.	75.	0.	0.	0.	0.	480.	84.	115.	59.	71.
NORTHWEST	0.	0.	0.	0.	9.	19.	28.	33.	35.	33.	28.	19.	23.	0.	0.	0.	0.	227.	64.	79.	50.	56.
NORTH	0.	0.	0.	0.	9.	19.	28.	33.	35.	33.	28.	19.	9.	0.	0.	0.	0.	212.	63.	77.	50.	56.
NORTHEAST	0.	0.	0.	0.	23.	19.	28.	33.	35.	33.	28.	19.	9.	0.	0.	0.	0.	227.	64.	79.	50.	56.
EAST	0.	0.	0.	0.	75.	108.	100.	72.	35.	33.	28.	19.	9.	0.	0.	0.	0.	480.	84.	115.	59.	71.
SOUTHEAST	0.	0.	0.	0.	88.	147.	163.	157.	134.	101.	61.	21.	9.	0.	0.	0.	0.	882.	116.	173.	71.	95.
HORIZ.	0.	0.	0.	0.	25.	66.	100.	121.	129.	121.	100.	66.	25.	0.	0.	0.	0.	752.	106.	154.	67.	87.
MONTH 12	HO 1272.	TOD 36.	TOT 33.	KT .457										KD .186								
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	0.	0.	36.	93.	128.	147.	154.	147.	128.	93.	36.	0.	0.	0.	0.	961.	116.	181.	64.	89.
SOUTHWEST	0.	0.	0.	0.	6.	21.	55.	89.	117.	135.	139.	120.	55.	0.	0.	0.	0.	738.	97.	147.	57.	89.
WEST	0.	0.	0.	0.	6.	16.	23.	28.	30.	61.	82.	86.	46.	0.	0.	0.	0.	378.	67.	93.	45.	55.
NORTHWEST	0.	0.	0.	0.	6.	16.	23.	28.	30.	28.	23.	16.	13.	0.	0.	0.	0.	184.	51.	64.	39.	44.
NORTH	0.	0.	0.	0.	6.	16.	23.	28.	30.	28.	23.	16.	6.	0.	0.	0.	0.	177.	51.	63.	39.	43.
NORTHEAST	0.	0.	0.	0.	13.	16.	23.	28.	30.	28.	23.	16.	6.	0.	0.	0.	0.	184.	51.	64.	39.	44.
EAST	0.	0.	0.	0.	46.	86.	82.	61.	30.	28.	23.	16.	6.	0.	0.	0.	0.	378.	67.	93.	45.	55.
SOUTHEAST	0.	0.	0.	0.	55.	120.	139.	135.	117.	89.	55.	21.	6.	0.	0.	0.	0.	738.	97.	147.	57.	89.
HORIZ.	0.	0.	0.	0.	14.	49.	78.	97.	104.	97.	78.	49.	14.	0.	0.	0.	0.	582.	84.	124.	52.	67.

LOCATION COLUMBIA, MISSOURI LATITUDE 38 DEGREES 57 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	111.	114.	116.	110.	115.	120.	130.	142.	160.	154.	136.	116.	127.
SOUTHWEST	94.	102.	111.	116.	126.	133.	143.	149.	153.	138.	116.	97.	123.
WEST	67.	81.	98.	113.	130.	139.	146.	145.	135.	111.	84.	67.	110.
NORTHWEST	50.	61.	79.	99.	117.	128.	133.	126.	110.	87.	64.	51.	92.
NORTH	49.	57.	70.	86.	102.	113.	116.	110.	98.	82.	63.	51.	83.
NORTHEAST	50.	61.	79.	99.	117.	128.	133.	126.	110.	87.	64.	51.	92.
EAST	67.	81.	98.	113.	130.	139.	146.	145.	135.	111.	84.	67.	110.
SOUTHEAST	94.	102.	111.	116.	126.	133.	143.	149.	153.	116.	97.	123.	123.
HORIZ.	86.	108.	134.	155.	183.	194.	202.	197.	181.	142.	106.	84.	148.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	174.	178.	173.	153.	151.	154.	168.	191.	227.	229.	210.	181.	182.
SOUTHWEST	143.	155.	164.	163.	172.	177.	190.	203.	215.	200.	173.	147.	175.
WEST	95.	117.	141.	158.	178.	188.	197.	195.	184.	151.	115.	93.	151.
NORTHWEST	64.	82.	106.	132.	156.	169.	173.	162.	139.	108.	79.	64.	119.
NORTH	62.	74.	90.	109.	128.	142.	143.	133.	118.	99.	77.	63.	103.
NORTHEAST	64.	82.	106.	132.	156.	169.	173.	162.	139.	108.	79.	64.	119.
EAST	95.	117.	141.	158.	178.	188.	197.	195.	184.	151.	115.	93.	151.
SOUTHEAST	143.	155.	164.	163.	172.	177.	190.	203.	215.	200.	173.	147.	175.
HORIZ.	130.	166.	206.	234.	272.	285.	295.	286.	265.	208.	154.	124.	219.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	62.	69.	78.	84.	92.	100.	107.	111.	113.	100.	80.	64.	88.
SOUTHWEST	55.	63.	75.	87.	99.	108.	115.	115.	109.	92.	71.	57.	87.
WEST	44.	54.	69.	85.	101.	112.	117.	113.	101.	80.	59.	45.	82.
NORTHWEST	37.	45.	59.	77.	94.	105.	109.	102.	88.	70.	50.	39.	73.
NORTH	36.	43.	55.	70.	84.	96.	99.	93.	82.	68.	50.	39.	68.
NORTHEAST	37.	45.	59.	77.	94.	105.	109.	102.	88.	70.	50.	39.	73.
EAST	44.	54.	69.	85.	101.	112.	117.	113.	101.	80.	59.	45.	82.
SOUTHEAST	55.	63.	75.	87.	99.	108.	115.	115.	109.	92.	71.	57.	87.
HORIZ.	52.	66.	87.	108.	133.	146.	150.	141.	124.	94.	67.	52.	102.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	87.	98.	106.	108.	114.	121.	130.	138.	147.	134.	110.	89.	115.
SOUTHWEST	75.	87.	102.	113.	127.	135.	143.	145.	141.	120.	95.	76.	113.
WEST	55.	70.	90.	110.	130.	142.	147.	140.	125.	98.	71.	55.	103.
NORTHWEST	43.	54.	73.	96.	117.	130.	133.	122.	102.	79.	56.	44.	87.
NORTH	42.	51.	65.	83.	100.	113.	115.	106.	92.	75.	56.	43.	78.
NORTHEAST	43.	54.	73.	96.	117.	130.	133.	122.	102.	79.	56.	44.	87.
EAST	55.	70.	90.	110.	130.	142.	147.	140.	125.	98.	71.	55.	103.
SOUTHEAST	75.	87.	102.	113.	127.	135.	143.	145.	141.	120.	95.	76.	113.
HORIZ.	69.	92.	123.	152.	186.	201.	206.	191.	166.	124.	87.	67.	139.

LOCATION COLUMBUS, OHIO LATITUDE 40 DEGREES 0 MINUTES

MONTH	1	HO	1430.	TOD	32.	TOT	30.	KT	.356	KD	.181	DAILY TOTAL RADIATION		SAG/DAYTIME SAT6S		SAG/ALL DAY SAT6S	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	32.	66.	89.	102.	106.	102.	89.	66.	32.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	8.	18.	42.	65.	84.	95.	97.	86.	50.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	8.	17.	23.	28.	29.	49.	63.	65.	43.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	8.	17.	23.	28.	29.	28.	23.	17.	15.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	8.	17.	23.	28.	29.	28.	23.	17.	8.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	15.	17.	23.	28.	29.	28.	23.	17.	8.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	43.	65.	83.	49.	29.	28.	23.	17.	8.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	50.	86.	97.	95.	84.	65.	42.	18.	8.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	18.	45.	67.	81.	86.	81.	67.	45.	18.	0.	0.	0.	0.

MONTH	2	HO	1996.	TOD	34.	TOT	31.	KT	.401	KD	.183	DAILY TOTAL RADIATION		SAG/DAYTIME SAT6S		SAG/ALL DAY SAT6S	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	11.	50.	81.	103.	117.	122.	117.	103.	81.	50.	11.	0.	0.	0.
SOUTHWEST	0.	0.	0.	4.	15.	25.	46.	74.	97.	113.	118.	111.	87.	23.	0.	0.	0.
WEST	0.	0.	0.	4.	15.	25.	32.	37.	38.	64.	83.	91.	81.	24.	0.	0.	0.
NORTHWEST	0.	0.	0.	4.	15.	25.	32.	37.	38.	37.	32.	32.	37.	14.	0.	0.	0.
NORTH	0.	0.	0.	4.	15.	25.	32.	37.	38.	37.	32.	25.	15.	4.	0.	0.	0.
NORTHEAST	0.	0.	0.	14.	37.	32.	32.	37.	38.	37.	32.	25.	15.	4.	0.	0.	0.
EAST	0.	0.	0.	24.	81.	91.	83.	64.	38.	37.	32.	25.	15.	4.	0.	0.	0.
SOUTHEAST	0.	0.	0.	23.	87.	111.	118.	113.	97.	74.	46.	25.	15.	4.	0.	0.	0.
HORIZ.	0.	0.	0.	8.	42.	74.	100.	116.	121.	116.	100.	74.	42.	8.	0.	0.	0.

MONTH	3	HO	2622.	TOD	43.	TOT	40.	HOURLY SOLAR RADIATION					KT	.447	KD	.185					DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-----								
SOUTH	0.	0.	0.	23.	56.	86.	109.	124.	129.	124.	109.	86.	56.	23.	0.	0.	0.			926.	102.	150.	69.	94.		
SOUTHWEST	0.	0.	0.	11.	23.	33.	46.	78.	105.	124.	133.	129.	110.	69.	0.	0.	0.			862.	98.	143.	67.	90.		
WEST	0.	0.	0.	11.	23.	33.	41.	46.	48.	79.	103.	116.	113.	81.	0.	0.	0.			695.	87.	123.	62.	80.		
NORTHWEST	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	55.	64.	52.	0.	0.	0.			461.	72.	96.	55.	67.		
NORTH	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.			359.	66.	84.	51.	61.		
NORTHEAST	0.	0.	0.	52.	64.	55.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.			461.	72.	96.	55.	67.		
EAST	0.	0.	0.	81.	113.	116.	103.	79.	48.	46.	41.	33.	23.	11.	0.	0.	0.			695.	87.	123.	62.	80.		
SOUTHEAST	0.	0.	0.	69.	110.	129.	133.	124.	105.	78.	46.	33.	23.	11.	0.	0.	0.			862.	98.	143.	67.	90.		
HORIZ.	0.	0.	0.	31.	72.	109.	137.	155.	161.	155.	137.	109.	72.	31.	0.	0.	0.			1170.	118.	179.	77.	108.		



LOCATION	COLUMBUS, OHIO		LATITUDE		40 DEGREES		0 MINUTES											
MONTH	4	H0 3235.	T00	53.	T0T	50.	KT	.470	KD	.186								
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SOUTH	0.	0.	7.	20.	49.	77.	100.	114.	119.	114.	100.	77.	49.	20.	7.	0.	0.	
SOUTHWEST	0.	0.	7.	19.	31.	41.	49.	72.	100.	120.	130.	128.	113.	83.	32.	0.	0.	
WEST	0.	0.	7.	19.	31.	41.	49.	53.	55.	58.	113.	128.	130.	110.	49.	0.	0.	
NORTHWEST	0.	0.	7.	19.	31.	41.	49.	53.	55.	53.	58.	77.	88.	83.	42.	0.	0.	
NORTH	0.	0.	14.	19.	31.	41.	49.	53.	55.	53.	49.	41.	31.	19.	14.	0.	0.	
NORTHEAST	0.	0.	42.	83.	88.	77.	58.	53.	55.	53.	49.	41.	31.	19.	7.	0.	0.	
EAST	0.	0.	49.	110.	130.	128.	113.	88.	55.	53.	49.	41.	31.	19.	7.	0.	0.	
SOUTHEAST	0.	0.	32.	83.	113.	128.	130.	120.	100.	72.	49.	41.	31.	19.	7.	0.	0.	
HORIZ.	0.	0.	17.	58.	101.	138.	167.	185.	191.	185.	167.	138.	101.	58.	17.	0.	0.	
DAILY TOTAL RADIATION																		
SAG/DAYTIME SATGS		103.	143.	77.	100.	851.	926.	107.	150.	145.	104.	145.	107.	150.	141.	213.	99.	139.
SAG/ALL DAY SATGS		77.	100.	80.	104.	872.	926.	104.	145.	78.	101.	872.	104.	145.	78.	101.	80.	104.
MONTH	5	H0 3622.	T00	64.	T0T	61.	KT	.515	KD	.186								
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SOUTH	0.	2.	12.	24.	41.	69.	92.	107.	112.	107.	92.	69.	41.	24.	12.	2.	0.	
SOUTHWEST	0.	2.	12.	24.	36.	46.	53.	66.	97.	119.	131.	131.	118.	91.	50.	2.	0.	
WEST	0.	2.	12.	24.	36.	46.	53.	58.	60.	96.	125.	143.	147.	132.	87.	3.	0.	
NORTHWEST	0.	2.	12.	24.	36.	46.	53.	58.	60.	58.	76.	98.	111.	110.	80.	3.	0.	
NORTH	0.	2.	33.	37.	36.	46.	53.	58.	60.	58.	53.	46.	36.	37.	33.	2.	0.	
NORTHEAST	0.	3.	80.	110.	111.	98.	76.	58.	60.	58.	53.	46.	36.	24.	12.	2.	0.	
EAST	0.	3.	87.	132.	147.	143.	125.	96.	60.	58.	53.	46.	36.	24.	12.	2.	0.	
SOUTHEAST	0.	2.	50.	91.	118.	131.	131.	119.	97.	66.	53.	46.	36.	24.	12.	2.	0.	
HORIZ.	0.	3.	35.	81.	126.	165.	196.	215.	222.	215.	196.	165.	126.	81.	35.	3.	0.	
DAILY TOTAL RADIATION																		
SAG/DAYTIME SATGS		111.	146.	88.	110.	810.	980.	1023.	826.	592.	81.	148.	167.	123.	163.	171.	252.	125.
SAG/ALL DAY SATGS		88.	110.	94.	120.	1023.	1111.	148.	81.	148.	96.	123.	167.	123.	163.	94.	120.	171.
MONTH	6	H0 3761.	T00	74.	T0T	71.	KT	.561	KD	.179								
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SOUTH	0.	4.	14.	26.	38.	66.	91.	107.	113.	107.	91.	66.	38.	26.	14.	4.	0.	
SOUTHWEST	0.	4.	14.	26.	38.	47.	55.	63.	98.	123.	138.	139.	126.	99.	58.	8.	0.	
WEST	0.	4.	14.	26.	38.	47.	55.	60.	61.	102.	136.	157.	164.	150.	106.	16.	0.	
NORTHWEST	0.	4.	14.	26.	38.	47.	55.	60.	61.	60.	86.	112.	128.	129.	101.	17.	0.	
NORTH	0.	10.	45.	47.	39.	47.	55.	60.	61.	60.	55.	47.	39.	47.	45.	10.	0.	
NORTHEAST	0.	17.	101.	129.	128.	112.	86.	60.	61.	60.	55.	47.	39.	26.	14.	4.	0.	
EAST	0.	16.	106.	150.	164.	157.	136.	102.	61.	60.	55.	47.	39.	26.	14.	4.	0.	
SOUTHEAST	0.	8.	58.	99.	126.	139.	138.	123.	68.	63.	55.	47.	39.	26.	14.	4.	0.	
HORIZ.	0.	7.	45.	95.	143.	185.	218.	239.	246.	239.	218.	185.	143.	95.	45.	7.	0.	
DAILY TOTAL RADIATION																		
SAG/DAYTIME SATGS		119.	153.	98.	119.	805.	1034.	1136.	937.	668.	45.	101.	17.	0.	0.	0.	0.	
SAG/ALL DAY SATGS		98.	119.	106.	133.	1034.	1136.	937.	668.	45.	101.	17.	0.	0.	0.	0.	0.	

[illegible]

LOCATION		COLUMBUS, OHIO		LATITUDE		40 DEGREES		0 MINUTES			
MONTH	10	HO	1962.	TOD	58.	TOT	54.	KT	441	KD	.185
ORIENTATION											
HOURLY SOLAR RADIATION											
4	5	6	7	8	9	10	11	12	13	14	15
0.	0.	0.	0.	55.	91.	117.	133.	138.	133.	117.	91.
SOUTH	0.	0.	0.	10.	55.	91.	117.	133.	138.	133.	117.
SOUTHWEST	0.	0.	0.	4.	15.	25.	50.	82.	109.	127.	134.
WEST	0.	0.	0.	4.	15.	25.	33.	36.	39.	70.	92.
NORTHWEST	0.	0.	0.	4.	15.	25.	33.	38.	39.	38.	33.
NORTH	0.	0.	0.	4.	15.	25.	33.	38.	39.	38.	33.
NORTHEAST	0.	0.	0.	13.	39.	33.	33.	38.	39.	38.	33.
EAST	0.	0.	0.	22.	90.	102.	92.	70.	39.	38.	33.
SOUTHEAST	0.	0.	0.	21.	96.	126.	134.	127.	109.	82.	50.
HORIZ.	0.	0.	0.	8.	44.	80.	108.	127.	133.	127.	108.
DAILY TOTAL RADIATION											
SAG/DAYTIME SAG/ALL DAY											
SATGS SATGD SATGS SATGD											
947. 126. 181. 85. 110. 790. 114. 160. 80. 101. 530. 96. 127. 72. 85. 310. 80. 98. 64. 73. 269. 77. 93. 63. 70. 310. 80. 98. 64. 73. 530. 96. 127. 72. 85. 790. 114. 160. 80. 101. 865. 120. 170. 82. 105.											

MONTH 11		HO 1418.		TOD 44.		TOT 42.		KT 302		KD .179										
ORIENTATION		HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS SATGD	SATGS SATGD		
SOUTH	0.	0.	0.	24.	50.	68.	78.	82.	78.	68.	50.	24.	0.	0.	0.	0.	86.	120.	59.	72.
SOUTHWEST	0.	0.	0.	7.	16.	35.	52.	66.	74.	74.	64.	36.	0.	0.	0.	0.	78.	106.	56.	67.
WEST	0.	0.	0.	7.	16.	22.	26.	28.	41.	49.	49.	31.	0.	0.	0.	0.	66.	84.	51.	58.
NORTHWEST	0.	0.	0.	7.	16.	22.	26.	28.	26.	22.	16.	12.	0.	0.	0.	0.	58.	70.	48.	52.
NORTH	0.	0.	0.	7.	16.	22.	26.	28.	26.	22.	16.	7.	0.	0.	0.	0.	58.	69.	47.	52.
NORTHEAST	0.	0.	0.	12.	16.	22.	26.	28.	26.	22.	16.	7.	0.	0.	0.	0.	58.	70.	48.	52.
EAST	0.	0.	0.	31.	49.	41.	28.	26.	22.	16.	7.	0.	0.	0.	0.	0.	66.	84.	51.	58.
SOUTHEAST	0.	0.	0.	36.	64.	74.	74.	66.	52.	35.	16.	7.	0.	0.	0.	0.	78.	106.	56.	67.
HORIZ.	0.	0.	0.	16.	38.	56.	68.	72.	68.	56.	38.	16.	0.	0.	0.	0.	79.	107.	56.	67.

MONTH 12		H0 1214.		TOD 34.		TOT 32.		KT .351		KD .181						
ORIENTATION																
HOURLY SOLAR RADIATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
-----																
SOUTH	0.	0.	0.	21.	62.	86.	100.	104.	100.	86.	62.	21.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	5.	17.	41.	63.	82.	92.	93.	78.	32.	0.	0.	0.	0.
WEST	0.	0.	0.	5.	14.	20.	25.	26.	45.	57.	57.	27.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	0.	0.	0.	20.	25.	26.	25.	20.	9.	0.	0.	0.
NORTH	0.	0.	0.	0.	5.	14.	20.	25.	26.	25.	20.	14.	5.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	9.	14.	20.	25.	26.	25.	20.	14.	5.	0.	0.	0.
EAST	0.	0.	0.	0.	27.	57.	57.	45.	26.	25.	20.	14.	5.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	32.	78.	93.	92.	82.	63.	41.	17.	5.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	11.	36.	58.	71.	76.	71.	58.	36.	11.	0.	0.	0.
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DAILY TOTAL RADIATION																
SAG/DAYTIME SAG/ALL DAY																
SATGS SATGD SATGS SATGD																
643. 48. 132. 52. 69. 503. 76. 111. 48. 61. 276. 57. 76. 41. 48. 157. 47. 58. 37. 41. 153. 47. 57. 37. 41. 157. 47. 58. 37. 41. 276. 57. 76. 41. 48. 503. 76. 111. 48. 61. 427. 70. 99. 45. 57.																

LOCATION COLUMBUS, OHIO LATITUDE 40 DEGREES 0 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	87.	94.	102.	103.	111.	119.	126.	128.	130.	126.	86.	88.	108.
SOUTHWEST	76.	85.	98.	107.	120.	131.	137.	120.	126.	114.	78.	76.	107.
WEST	58.	69.	87.	104.	123.	137.	140.	129.	115.	96.	66.	57.	98.
NORTHWEST	47.	55.	72.	91.	111.	126.	127.	116.	100.	80.	58.	47.	86.
NORTH	46.	52.	66.	80.	98.	111.	112.	104.	94.	77.	58.	47.	79.
NORTHEAST	47.	55.	72.	91.	111.	126.	127.	116.	100.	80.	58.	47.	86.
EAST	58.	69.	87.	104.	123.	137.	140.	129.	115.	96.	66.	57.	98.
SOUTHEAST	76.	85.	98.	107.	120.	131.	137.	130.	126.	114.	78.	76.	107.
HORIZ.	73.	91.	118.	141.	171.	191.	192.	170.	147.	120.	79.	70.	130.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	131.	143.	150.	143.	146.	153.	163.	168.	176.	181.	120.	132.	151.
SOUTHWEST	111.	126.	143.	150.	163.	175.	183.	176.	169.	160.	106.	111.	148.
WEST	79.	98.	123.	145.	167.	185.	188.	170.	150.	127.	84.	76.	133.
NORTHWEST	59.	73.	96.	122.	148.	166.	165.	146.	124.	98.	70.	58.	110.
NORTH	58.	68.	84.	102.	124.	139.	139.	126.	112.	93.	69.	57.	98.
NORTHEAST	59.	73.	96.	122.	148.	166.	165.	146.	124.	98.	70.	58.	110.
EAST	79.	98.	123.	145.	167.	185.	188.	170.	150.	127.	84.	76.	133.
SOUTHEAST	111.	126.	143.	150.	163.	175.	183.	176.	169.	160.	106.	111.	148.
HORIZ.	106.	137.	179.	213.	252.	280.	280.	241.	206.	170.	107.	99.	189.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	52.	58.	69.	77.	88.	98.	103.	102.	97.	85.	59.	52.	78.
SOUTHWEST	47.	54.	67.	80.	94.	106.	110.	104.	95.	80.	56.	48.	78.
WEST	40.	47.	62.	78.	96.	110.	112.	102.	89.	72.	51.	41.	75.
NORTHWEST	36.	41.	55.	71.	89.	103.	104.	95.	82.	64.	48.	37.	69.
NORTH	35.	40.	51.	65.	81.	94.	95.	88.	79.	63.	47.	37.	65.
NORTHEAST	36.	41.	55.	71.	89.	103.	104.	95.	82.	64.	48.	37.	69.
EAST	40.	47.	62.	78.	96.	110.	112.	102.	89.	72.	51.	41.	75.
SOUTHEAST	47.	54.	67.	80.	94.	106.	110.	104.	95.	80.	56.	48.	78.
HORIZ.	46.	57.	77.	99.	125.	143.	143.	125.	105.	82.	56.	45.	92.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	70.	80.	94.	100.	110.	119.	126.	124.	120.	110.	72.	69.	99.
SOUTHWEST	61.	73.	90.	104.	120.	133.	137.	128.	116.	101.	67.	61.	99.
WEST	49.	60.	80.	101.	123.	139.	140.	125.	107.	85.	58.	48.	93.
NORTHWEST	41.	49.	67.	88.	111.	127.	127.	112.	94.	73.	52.	41.	82.
NORTH	40.	47.	61.	77.	97.	111.	111.	101.	88.	70.	52.	41.	75.
NORTHEAST	41.	49.	67.	88.	111.	127.	127.	112.	94.	73.	52.	41.	82.
EAST	49.	60.	80.	101.	123.	139.	140.	125.	107.	85.	58.	48.	93.
SOUTHEAST	61.	73.	90.	104.	120.	133.	137.	128.	116.	101.	67.	61.	99.
HORIZ.	59.	78.	108.	139.	173.	198.	196.	165.	135.	105.	67.	57.	123.



LOCATION		DAVIS, CALIFORNIA		LATITUDE		38 DEGREES		32 MINUTES																	
MONTH	1	HO	1509.	TOD	49.	TOT	44.	KT	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS		SATGD			
SOUTH	0.	0.	0.	0.	44.	85.	112.	127.	133.	127.	112.	85.	44.	0.	0.	0.	0.	868.	116.	172.	72.	95.			
SOUTHWEST	0.	0.	0.	0.	9.	20.	50.	79.	103.	119.	123.	111.	69.	0.	0.	0.	0.	684.	101.	145.	66.	84.			
WEST	0.	0.	0.	0.	9.	19.	26.	31.	32.	59.	78.	83.	59.	0.	0.	0.	0.	397.	79.	104.	57.	67.			
NORTHWEST	0.	0.	0.	0.	9.	19.	26.	31.	32.	31.	26.	19.	20.	0.	0.	0.	0.	212.	64.	78.	51.	57.			
NORTH	0.	0.	0.	0.	9.	19.	26.	31.	32.	31.	26.	19.	9.	0.	0.	0.	0.	201.	63.	76.	51.	56.			
NORTHEAST	0.	0.	0.	0.	20.	19.	26.	31.	32.	31.	26.	19.	9.	0.	0.	0.	0.	212.	64.	78.	51.	57.			
EAST	0.	0.	0.	0.	59.	83.	78.	59.	32.	31.	26.	19.	9.	0.	0.	0.	0.	397.	79.	104.	57.	67.			
SOUTHEAST	0.	0.	0.	0.	69.	111.	123.	119.	103.	79.	50.	20.	9.	0.	0.	0.	0.	684.	101.	145.	66.	84.			
HORIZ.	0.	0.	0.	0.	23.	56.	83.	100.	106.	100.	83.	56.	23.	0.	0.	0.	0.	628.	97.	137.	64.	81.			
MONTH	2	HO	2067.	TOD	52.	TOT	50.	KT	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS		SATGD			
SOUTH	0.	0.	0.	15.	66.	104.	133.	150.	156.	150.	133.	104.	66.	15.	0.	0.	0.	1093.	129.	193.	85.	113.			
SOUTHWEST	0.	0.	0.	5.	17.	28.	54.	92.	123.	145.	154.	148.	118.	35.	0.	0.	0.	918.	117.	170.	79.	103.			
WEST	0.	0.	0.	5.	17.	28.	36.	41.	43.	79.	107.	120.	110.	38.	0.	0.	0.	623.	96.	132.	70.	86.			
NORTHWEST	0.	0.	0.	5.	17.	28.	36.	41.	43.	41.	36.	39.	48.	21.	0.	0.	0.	354.	77.	98.	61.	70.			
NORTH	0.	0.	0.	5.	17.	28.	36.	41.	43.	41.	36.	28.	17.	5.	0.	0.	0.	296.	73.	90.	59.	67.			
NORTHEAST	0.	0.	0.	21.	48.	39.	36.	41.	43.	41.	36.	28.	17.	5.	0.	0.	0.	354.	77.	98.	61.	70.			
EAST	0.	0.	0.	38.	110.	120.	107.	79.	43.	41.	36.	28.	17.	5.	0.	0.	0.	623.	96.	132.	70.	86.			
SOUTHEAST	0.	0.	0.	35.	118.	148.	154.	145.	123.	92.	54.	28.	17.	5.	0.	0.	0.	918.	117.	170.	79.	103.			
HORIZ.	0.	0.	0.	10.	53.	94.	126.	147.	154.	147.	126.	94.	53.	10.	0.	0.	0.	1013.	124.	182.	82.	109.			
MONTH	3	HO	2676.	TOD	57.	TOT	54.	KT	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS		SATGD			
SOUTH	0.	0.	0.	30.	76.	117.	150.	170.	177.	170.	150.	117.	76.	30.	0.	0.	0.	1264.	138.	204.	94.	128.			
SOUTHWEST	0.	0.	0.	12.	25.	36.	50.	99.	141.	172.	188.	187.	162.	104.	0.	0.	0.	1176.	132.	193.	92.	122.			
WEST	0.	0.	0.	12.	25.	36.	45.	51.	53.	102.	143.	168.	168.	123.	0.	0.	0.	927.	116.	164.	84.	108.			
NORTHWEST	0.	0.	0.	12.	25.	36.	45.	51.	53.	51.	45.	72.	90.	78.	0.	0.	0.	558.	93.	122.	72.	86.			
NORTH	0.	0.	0.	12.	25.	36.	45.	51.	53.	51.	45.	36.	25.	12.	0.	0.	0.	391.	82.	102.	66.	77.			
NORTHEAST	0.	0.	0.	78.	90.	72.	45.	51.	53.	51.	45.	36.	25.	12.	0.	0.	0.	558.	93.	122.	72.	86.			
EAST	0.	0.	0.	123.	168.	168.	143.	102.	53.	51.	45.	36.	25.	12.	0.	0.	0.	927.	116.	164.	84.	108.			
SOUTHEAST	0.	0.	0.	104.	162.	187.	188.	172.	141.	99.	50.	36.	25.	12.	0.	0.	0.	1176.	132.	193.	92.	122.			
HORIZ.	0.	0.	0.	40.	96.	147.	186.	211.	220.	211.	186.	147.	96.	40.	0.	0.	0.	1580.	158.	240.	105.	146.			

LOCATION	DAVIS, CALIFORNIA	LATITUDE	38 DEGREES	32 MINUTES
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MONTH	4	H0	3263.	T0D	63.	T0T	58.	KT	.617	KD	.170						
ORIENTATION																	
HOURLY SOLAR RADIATION																	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	7.	19.	58.	97.	128.	148.	155.	148.	128.	97.	58.	19.	7.	0.	0.
SOUTHWEST	0.	0.	7.	19.	32.	43.	52.	83.	127.	159.	178.	179.	161.	120.	44.	0.	0.
WEST	0.	0.	7.	19.	32.	43.	52.	57.	59.	111.	153.	181.	188.	162.	70.	0.	0.
NORTHWEST	0.	0.	7.	19.	32.	43.	52.	57.	59.	57.	70.	103.	124.	121.	59.	0.	0.
NORTH	0.	0.	17.	20.	32.	43.	52.	57.	59.	57.	52.	43.	32.	20.	17.	0.	0.
NORTHEAST	0.	0.	59.	121.	124.	103.	70.	57.	59.	57.	52.	43.	32.	19.	7.	0.	0.
EAST	0.	0.	70.	162.	188.	181.	153.	111.	59.	57.	52.	43.	32.	19.	7.	0.	0.
SOUTHEAST	0.	0.	44.	120.	161.	179.	178.	159.	127.	83.	52.	43.	32.	19.	7.	0.	0.
NORIZ.	0.	0.	18.	73.	132.	223.	249.	257.	249.	223.	183.	132.	73.	18.	0.	0.	0.
DAILY TOTAL RADIATION												1069.	125.	176.	92.	120.	
SAG/DAYTIME SAT6S												1203.	133.	190.	97.	128.	
SAG/ALL DAY SAT6S												1134.	129.	182.	95.	124.	
SAG/ALL DAY SAT6S												801.	110.	147.	84.	105.	
SAG/ALL DAY SAT6S												501.	92.	116.	74.	87.	
SAG/ALL DAY SAT6S												801.	110.	147.	84.	105.	
SAG/ALL DAY SAT6S												1134.	129.	182.	95.	124.	
SAG/ALL DAY SAT6S												1203.	133.	190.	97.	128.	
SAG/ALL DAY SAT6S												2014.	180.	275.	123.	176.	

[illegible][illegible]

LOCATION	DAVIS, CALIFORNIA				LATITUDE				38 DEGREES				32 MINUTES																			
MONTH	7	HO	3624.	TOD	81.	TOT	75.	KT	.697	KD	.150																					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGd	SAG/ALL DAY SATGS	SATGd										
SOUTH	0.	1.	11.	24.	40.	80.	113.	134.	142.	134.	113.	80.	40.	24.	11.	1.	0.	948.	135.	177.	107.	132.										
SOUTHWEST	0.	1.	11.	24.	36.	46.	54.	68.	118.	156.	179.	184.	168.	131.	69.	1.	0.	1247.	153.	207.	117.	150.										
WEST	0.	1.	11.	24.	36.	46.	54.	59.	61.	122.	172.	207.	219.	199.	127.	1.	0.	1340.	158.	217.	120.	156.										
NORTHWEST	0.	1.	11.	24.	36.	46.	54.	59.	61.	59.	96.	136.	162.	164.	117.	1.	0.	1029.	140.	185.	110.	137.										
NORTH	0.	1.	45.	47.	36.	46.	54.	59.	61.	59.	54.	46.	36.	47.	45.	1.	0.	639.	118.	146.	96.	113.										
NORTHEAST	0.	1.	117.	164.	162.	136.	96.	59.	61.	59.	54.	46.	36.	24.	11.	1.	0.	1029.	140.	185.	110.	137.										
EAST	0.	1.	127.	199.	219.	207.	172.	122.	61.	59.	54.	46.	36.	24.	11.	1.	0.	1340.	158.	217.	120.	156.										
SOUTHEAST	0.	1.	69.	131.	168.	184.	179.	156.	118.	68.	54.	46.	36.	24.	11.	1.	0.	1247.	153.	207.	117.	150.										
HORIZ.	0.	2.	41.	105.	169.	226.	270.	297.	307.	297.	270.	226.	169.	105.	41.	2.	0.	2526.	226.	337.	161.	227.										
MONTH	8	HO	3240.	TOD	79.	TOT	73.	KT	.687	KD	.152																					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGd	SAG/ALL DAY SATGS	SATGd										
SOUTH	0.	0.	6.	19.	62.	106.	141.	164.	172.	164.	141.	106.	62.	19.	6.	0.	0.	1168.	151.	207.	113.	144.										
SOUTHWEST	0.	0.	6.	19.	31.	42.	51.	87.	139.	178.	201.	203.	182.	134.	45.	0.	0.	1318.	161.	223.	118.	153.										
WEST	0.	0.	6.	19.	31.	42.	51.	56.	58.	121.	172.	206.	214.	182.	73.	0.	0.	1232.	155.	214.	115.	148.										
NORTHWEST	0.	0.	6.	19.	31.	42.	51.	56.	58.	56.	73.	113.	139.	135.	61.	0.	0.	841.	131.	171.	102.	124.										
NORTH	0.	0.	17.	20.	31.	42.	51.	56.	58.	56.	51.	42.	31.	20.	17.	0.	0.	494.	110.	133.	90.	103.										
NORTHEAST	0.	0.	61.	135.	139.	113.	73.	56.	58.	56.	51.	42.	31.	19.	6.	0.	0.	841.	131.	171.	102.	124.										
EAST	0.	0.	73.	182.	214.	206.	172.	121.	58.	56.	51.	42.	31.	19.	6.	0.	0.	1232.	155.	214.	115.	148.										
SOUTHEAST	0.	0.	45.	134.	182.	203.	201.	178.	139.	87.	51.	42.	31.	19.	6.	0.	0.	1318.	161.	223.	11.	153.										
HORIZ.	0.	0.	17.	78.	144.	203.	249.	278.	287.	278.	249.	203.	144.	78.	17.	0.	0.	2226.	217.	322.	149.	208.										
MONTH	9	HO	2662.	TOD	77.	TOT	70.	KT	.664	KD	.158																					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGd	SAG/ALL DAY SATGS	SATGd										
SOUTH	0.	0.	0.	32.	84.	132.	170.	194.	203.	194.	170.	132.	84.	32.	0.	0.	0.	1429.	174.	248.	119.	157.										
SOUTHWEST	0.	0.	0.	11.	24.	36.	50.	108.	159.	197.	217.	216.	187.	115.	0.	0.	0.	1320.	167.	235.	115.	150.										
WEST	0.	0.	0.	11.	24.	36.	45.	50.	52.	113.	163.	194.	194.	138.	0.	0.	0.	1022.	146.	200.	105.	132.										
NORTHWEST	0.	0.	0.	11.	24.	36.	45.	50.	52.	50.	45.	79.	103.	87.	0.	0.	0.	583.	116.	147.	90.	106.										
NORTH	0.	0.	0.	11.	24.	36.	45.	50.	52.	50.	45.	36.	24.	11.	0.	0.	0.	386.	103.	123.	84.	94.										
NORTHEAST	0.	0.	0.	87.	103.	79.	45.	50.	52.	50.	45.	36.	24.	11.	0.	0.	0.	583.	116.	147.	90.	106.										
EAST	0.	0.	0.	138.	194.	194.	163.	113.	52.	50.	45.	36.	24.	11.	0.	0.	0.	1022.	146.	200.	105.	132.										
SOUTHEAST	0.	0.	0.	115.	187.	216.	217.	197.	159.	108.	50.	36.	24.	11.	0.	0.	0.	1320.	167.	235.	115.	150.										
HORIZ.	0.	0.	0.	42.	106.	164.	209.	238.	248.	238.	209.	164.	106.	42.	0.	0.	0.	1767.	197.	289.	131.	177.										





## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	116.	129.	138.	125.	123.	124.	135.	151.	174.	168.	139.	120.	137.
SOUTHWEST	101.	117.	132.	133.	139.	143.	153.	161.	167.	150.	121.	104.	135.
WEST	79.	96.	116.	129.	144.	152.	158.	155.	146.	120.	93.	78.	122.
NORTHWEST	64.	77.	93.	110.	127.	137.	140.	131.	116.	94.	75.	64.	102.
NORTH	63.	73.	82.	92.	106.	116.	118.	110.	103.	89.	74.	63.	91.
NORTHEAST	64.	77.	93.	110.	127.	137.	140.	131.	116.	94.	75.	64.	102.
EAST	79.	96.	116.	129.	144.	152.	158.	155.	146.	120.	93.	78.	122.
SOUTHEAST	101.	117.	132.	133.	139.	143.	153.	161.	167.	150.	121.	104.	135.
HORIZ.	97.	124.	158.	180.	208.	222.	226.	217.	197.	154.	113.	94.	166.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	172.	193.	204.	176.	163.	162.	177.	207.	248.	249.	206.	178.	195.
SOUTHWEST	145.	170.	193.	190.	192.	195.	207.	223.	235.	217.	173.	149.	191.
WEST	104.	132.	164.	182.	200.	211.	217.	214.	200.	163.	122.	102.	168.
NORTHWEST	78.	98.	122.	147.	171.	184.	185.	171.	147.	116.	89.	76.	132.
NORTH	76.	90.	102.	116.	134.	146.	146.	133.	123.	106.	87.	75.	111.
NORTHEAST	78.	98.	122.	147.	171.	184.	185.	171.	147.	116.	89.	76.	132.
EAST	104.	132.	164.	182.	200.	211.	217.	214.	200.	163.	122.	102.	168.
SOUTHEAST	145.	170.	193.	190.	192.	195.	207.	223.	235.	217.	173.	149.	191.
HORIZ.	137.	182.	240.	275.	313.	334.	337.	322.	289.	225.	159.	131.	245.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	72.	85.	94.	92.	96.	100.	107.	113.	119.	108.	86.	73.	96.
SOUTHWEST	66.	79.	92.	97.	105.	112.	117.	118.	115.	100.	79.	67.	96.
WEST	57.	70.	84.	95.	108.	117.	120.	115.	105.	86.	68.	57.	90.
NORTHWEST	51.	61.	72.	84.	98.	108.	110.	102.	90.	75.	60.	52.	80.
NORTH	51.	59.	66.	74.	86.	95.	96.	90.	84.	72.	60.	51.	74.
NORTHEAST	51.	61.	72.	84.	98.	108.	110.	102.	90.	75.	60.	52.	80.
EAST	57.	70.	84.	95.	108.	117.	120.	115.	105.	86.	68.	57.	90.
SOUTHEAST	66.	79.	92.	97.	105.	112.	117.	118.	115.	100.	79.	67.	96.
HORIZ.	64.	82.	105.	123.	146.	160.	161.	149.	131.	102.	76.	63.	114.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	95.	113.	128.	120.	120.	123.	132.	144.	157.	145.	114.	96.	124.
SOUTHWEST	84.	103.	122.	128.	137.	143.	150.	153.	150.	130.	100.	85.	124.
WEST	67.	86.	108.	124.	142.	153.	156.	148.	132.	106.	79.	66.	114.
NORTHWEST	57.	70.	86.	105.	124.	137.	137.	124.	106.	84.	66.	56.	96.
NORTH	56.	67.	77.	87.	102.	114.	113.	103.	94.	80.	65.	56.	85.
NORTHEAST	57.	70.	86.	105.	124.	137.	137.	124.	106.	84.	66.	56.	96.
EAST	67.	86.	108.	124.	142.	153.	156.	148.	132.	106.	79.	66.	114.
SOUTHEAST	84.	103.	122.	128.	137.	143.	150.	153.	150.	130.	100.	85.	124.
HORIZ.	81.	109.	146.	176.	209.	228.	227.	208.	177.	133.	95.	78.	156.

LOCATION	DODGE CITY, KANSAS				LATITUDE 37 DEGREES 46 MINUTES																	
MONTH 1	HO 1552.	TOD 34.	TOT 30.	KT .639	KD .164																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	DAY SATGD
SOUTH	0.	0.	0.	0.	83.	156.	203.	231.	240.	231.	203.	156.	83.	0.	0.	0.	0.	1585.	158.	259.	81.	123.
SOUTHWEST	0.	0.	0.	0.	0.	10.	22.	77.	133.	180.	214.	227.	211.	137.	0.	0.	0.	1211.	129.	206.	69.	101.
WEST	0.	0.	0.	0.	0.	10.	21.	29.	35.	37.	93.	136.	154.	117.	0.	0.	0.	631.	83.	123.	51.	67.
NORTHWEST	0.	0.	0.	0.	0.	10.	21.	29.	35.	37.	35.	29.	21.	34.	0.	0.	0.	250.	53.	69.	38.	45.
NORTH	0.	0.	0.	0.	0.	10.	21.	29.	35.	37.	35.	29.	21.	10.	0.	0.	0.	226.	51.	66.	38.	43.
NORTHEAST	0.	0.	0.	0.	0.	34.	21.	29.	35.	37.	35.	29.	21.	10.	0.	0.	0.	250.	53.	69.	38.	45.
EAST	0.	0.	0.	0.	0.	117.	154.	136.	93.	37.	35.	29.	21.	10.	0.	0.	0.	631.	83.	123.	51.	67.
SOUTHEAST	0.	0.	0.	0.	0.	137.	211.	227.	214.	180.	133.	77.	22.	10.	0.	0.	0.	1211.	129.	206.	69.	101.
HORIZ.	0.	0.	0.	0.	0.	34.	87.	131.	159.	169.	159.	131.	87.	34.	0.	0.	0.	992.	111.	175.	62.	88.
MONTH 2	HO 2105.	TOD 39.	TOT 35.	KT .598	KD .174																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	DAY SATGD
SOUTH	0.	0.	0.	20.	96.	136.	172.	194.	202.	194.	172.	136.	86.	20.	0.	0.	0.	1417.	139.	220.	80.	118.
SOUTHWEST	0.	0.	0.	5.	17.	29.	63.	113.	156.	187.	202.	196.	159.	51.	0.	0.	0.	1178.	122.	190.	73.	104.
WEST	0.	0.	0.	5.	17.	29.	38.	43.	45.	96.	137.	159.	149.	55.	0.	0.	0.	773.	93.	138.	60.	80.
NORTHWEST	0.	0.	0.	5.	17.	29.	38.	43.	45.	43.	38.	46.	62.	29.	0.	0.	0.	395.	67.	89.	48.	58.
NORTH	0.	0.	0.	5.	17.	29.	38.	43.	45.	43.	38.	29.	17.	5.	0.	0.	0.	310.	61.	78.	45.	53.
NORTHEAST	0.	0.	0.	29.	62.	46.	38.	43.	45.	43.	38.	29.	17.	5.	0.	0.	0.	395.	67.	89.	48.	58.
EAST	0.	0.	0.	55.	149.	159.	137.	96.	45.	43.	38.	29.	17.	5.	0.	0.	0.	773.	93.	138.	60.	80.
SOUTHEAST	0.	0.	0.	51.	159.	196.	202.	187.	156.	113.	63.	29.	17.	5.	0.	0.	0.	1178.	122.	190.	73.	104.
HORIZ.	0.	0.	0.	12.	65.	117.	157.	183.	192.	183.	157.	117.	65.	12.	0.	0.	0.	1259.	128.	200.	75.	108.
MONTH 3	HO 2704.	TOD 46.	TOT 43.	KT .606	KD .173																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	DAY SATGD
SOUTH	0.	0.	0.	31.	77.	120.	153.	174.	181.	174.	153.	120.	77.	31.	0.	0.	0.	1290.	129.	196.	84.	118.
SOUTHWEST	0.	0.	0.	12.	25.	37.	49.	100.	143.	176.	193.	192.	168.	108.	0.	0.	0.	1205.	124.	186.	81.	113.
WEST	0.	0.	0.	12.	25.	37.	46.	51.	53.	105.	148.	174.	175.	129.	0.	0.	0.	955.	108.	157.	73.	98.
NORTHWEST	0.	0.	0.	12.	25.	37.	46.	51.	53.	51.	46.	75.	94.	81.	0.	0.	0.	572.	83.	113.	61.	76.
NORTH	0.	0.	0.	12.	25.	37.	46.	51.	53.	51.	46.	37.	25.	12.	0.	0.	0.	396.	72.	92.	55.	66.
NORTHEAST	0.	0.	0.	81.	94.	75.	46.	51.	53.	51.	46.	37.	25.	12.	0.	0.	0.	572.	83.	113.	61.	76.
EAST	0.	0.	0.	129.	175.	174.	148.	105.	53.	51.	46.	37.	25.	12.	0.	0.	0.	955.	108.	157.	73.	98.
SOUTHEAST	0.	0.	0.	108.	168.	192.	193.	176.	143.	100.	49.	37.	25.	12.	0.	0.	0.	1205.	124.	186.	81.	113.
SORIZ.	0.	0.	0.	41.	100.	152.	193.	219.	228.	219.	193.	152.	100.	41.	0.	0.	0.	1637.	151.	237.	95.	138.

LOCATION DODGE CITY, KANSAS LATITUDE 37 DEGREES 46 MINUTES

MONTH	4	HO	3278.	TOD	58.	TOT	54.	KT	.61R	KD	.170						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	6.	19.	57.	95.	126.	146.	153.	146.	126.	95.	57.	19.	6.	0.	0.
SOUTHWEST	0.	0.	6.	19.	32.	43.	52.	82.	125.	158.	177.	178.	160.	119.	43.	0.	0.
WEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	111.	154.	182.	188.	162.	68.	0.	0.
NORTHWEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	57.	72.	104.	125.	121.	57.	0.	0.
NORTH	0.	0.	17.	21.	32.	43.	52.	57.	59.	57.	52.	43.	32.	21.	17.	0.	0.
NORTHEAST	0.	0.	57.	121.	125.	104.	72.	57.	59.	57.	52.	43.	32.	19.	6.	0.	0.
EAST	0.	0.	68.	162.	188.	182.	154.	111.	59.	57.	52.	43.	32.	19.	6.	0.	0.
SOUTHEAST	0.	0.	43.	119.	160.	178.	177.	158.	125.	82.	52.	43.	32.	19.	6.	0.	0.
HORIZ.	0.	0.	17.	73.	133.	185.	225.	251.	259.	251.	225.	185.	133.	73.	17.	0.	0.
		</															

MONTH	5	HO	3630.	TOD	67.	TOT	63.	KT	.594	KD	.175						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	1.	12.	24.	39.	72.	98.	116.	121.	116.	98.	72.	39.	24.	12.	1.	0.
SOUTHWEST	0.	1.	12.	24.	36.	47.	55.	66.	104.	133.	150.	152.	138.	107.	57.	1.	0.
WEST	0.	1.	12.	24.	36.	47.	55.	60.	62.	108.	146.	170.	177.	160.	102.	1.	0.
NORTHWEST	0.	1.	12.	24.	36.	47.	55.	60.	62.	60.	88.	117.	134.	133.	94.	1.	0.
NORTH	0.	1.	38.	43.	36.	47.	55.	60.	62.	60.	55.	47.	36.	43.	38.	1.	0.
NORTHEAST	0.	1.	94.	133.	134.	117.	88.	60.	62.	60.	55.	47.	36.	24.	12.	1.	0.
EAST	0.	1.	102.	160.	177.	170.	146.	108.	62.	60.	55.	47.	36.	24.	12.	1.	0.
SOUTHEAST	0.	1.	57.	107.	138.	152.	150.	133.	104.	66.	55.	47.	36.	24.	12.	1.	0.
HORIZ.	0.	1.	36.	91.	145.	192.	229.	252.	260.	252.	229.	192.	145.	91.	36.	1.	0.

MONTH	6	HO	3754.	TOD	77.	TOT	73.	KT	.655	KD	.160						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	2.	13.	25.	37.	66.	95.	114.	120.	114.	95.	66.	37.	25.	13.	2.	0.
SOUTHWEST	0.	2.	13.	25.	37.	48.	56.	61.	103.	137.	157.	161.	148.	116.	66.	5.	0.
WEST	0.	2.	13.	25.	37.	48.	56.	61.	62.	116.	160.	190.	200.	184.	127.	9.	0.
NORTHWEST	0.	2.	13.	25.	37.	48.	56.	61.	62.	62.	102.	136.	158.	159.	121.	9.	0.
NORTH	0.	6.	52.	56.	44.	48.	56.	61.	62.	61.	56.	48.	44.	56.	52.	6.	0.
NORTHEAST	0.	9.	121.	159.	158.	136.	102.	62.	62.	61.	56.	48.	37.	25.	13.	2.	0.
EAST	0.	9.	127.	184.	200.	190.	160.	116.	62.	61.	56.	48.	37.	25.	13.	2.	0.
SOUTHEAST	0.	5.	66.	116.	148.	161.	157.	137.	103.	61.	56.	48.	37.	25.	13.	2.	0.
HORIZ.	0.	4.	47.	107.	166.	218.	258.	283.	292.	283.	258.	218.	166.	107.	47.	4.	0.
												</					

LOCATION		DODGE CITY, KANSAS		LATITUDE		37 DEGREES		46 MINUTES															
MONTH	7	HO	3626.	TOD	84.	TOT	80.	KT	.652	KD	.161												
ORIENTATION																							
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20							
HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION				SAG/DAYTIME SATGS		SAG/ALL DAY SATGS					
SOUTH	0.	1.	11.	24.	78.	75.	105.	124.	131.	124.	105.	75.	38.	24.	11.	0.	886.	135.	174.	110.	133.		
SOUTHWEST	0.	1.	11.	24.	36.	47.	55.	66.	111.	145.	165.	169.	154.	119.	62.	1.	0.	1164.	151.	202.	120.	150.	
WEST	0.	1.	11.	24.	36.	47.	55.	60.	62.	116.	161.	191.	200.	180.	114.	1.	0.	1257.	156.	212.	123.	156.	
NORTHWEST	0.	1.	11.	24.	36.	47.	55.	60.	62.	60.	94.	129.	150.	150.	105.	1.	0.	984.	141.	184.	114.	139.	
NORTH	0.	1.	41.	46.	36.	47.	55.	60.	62.	60.	55.	47.	36.	46.	41.	1.	0.	632.	120.	148.	102.	118.	
NORTHEAST	0.	1.	105.	150.	150.	129.	94.	60.	62.	60.	55.	47.	36.	24.	11.	1.	0.	984.	141.	184.	114.	139.	
EAST	0.	1.	114.	180.	200.	191.	161.	116.	62.	60.	55.	47.	36.	24.	11.	1.	0.	1257.	156.	212.	123.	156.	
SOUTHEAST	0.	1.	62.	119.	154.	169.	165.	145.	111.	66.	55.	47.	36.	24.	11.	1.	0.	1164.	151.	202.	120.	150.	
HORIZ.	0.	2.	38.	98.	158.	211.	252.	278.	287.	278.	252.	211.	158.	98.	38.	2.	0.	2364.	220.	325.	161.	223.	
MONTH 8												DAILY TOTAL RADIATION				SAG/DAYTIME SATGS		SAG/ALL DAY SATGS					
HO	3254.	TOD	82.	-TOT	79.	KT	.663	KD	.158														
ORIENTATION												HOURLY SOLAR RADIATION				DAILY TOTAL RADIATION				SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1112.	151.	204.	117.	146.		
SOUTH	0.	0.	6.	19.	59.	101.	134.	156.	163.	156.	134.	101.	59.	19.	6.	0.	0.	1112.	151.	204.	117.	146.	
SOUTHWEST	0.	0.	6.	19.	32.	43.	51.	84.	133.	170.	191.	193.	173.	127.	42.	0.	0.	1262.	160.	220.	122.	155.	
WEST	0.	0.	6.	19.	32.	43.	51.	57.	59.	117.	166.	197.	204.	173.	67.	0.	0.	1191.	156.	213.	119.	151.	
NORTHWEST	0.	0.	6.	19.	32.	43.	51.	57.	59.	57.	74.	111.	134.	129.	57.	0.	0.	828.	134.	173.	107.	129.	
NORTH	0.	0.	16.	20.	32.	43.	51.	57.	59.	57.	51.	43.	32.	20.	16.	0.	0.	498.	113.	137.	96.	109.	
NORTHEAST	0.	0.	57.	129.	134.	111.	74.	57.	59.	57.	51.	43.	32.	19.	6.	0.	0.	828.	134.	173.	107.	129.	
EAST	0.	0.	67.	173.	204.	197.	166.	117.	59.	57.	51.	43.	32.	19.	6.	0.	0.	1191.	156.	213.	119.	151.	
SOUTHEAST	0.	0.	42.	127.	173.	193.	191.	170.	133.	84.	51.	43.	32.	19.	6.	0.	0.	1262.	160.	220.	122.	155.	
HORIZ.	0.	0.	17.	76.	140.	197.	241.	269.	279.	269.	241.	197.	140.	76.	17.	0.	0.	2158.	216.	318.	152.	209.	
MONTH 9												DAILY TOTAL RADIATION				SAG/DAYTIME SATGS		SAG/ALL DAY SATGS					
HO	2690.	TOD	74.	TOT	70.	KT	.654	KD	.161														
ORIENTATION												HOURLY SOLAR RADIATION				DAILY TOTAL RADIATION				SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1390.	168.	241.	117.	154.		
SOUTH	0.	0.	31.	82.	129.	166.	189.	197.	189.	166.	129.	82.	31.	0.	0.	0.	0.	1390.	168.	241.	117.	154.	
SOUTHWEST	0.	0.	12.	25.	36.	49.	105.	155.	192.	212.	211.	183.	113.	0.	0.	0.	0.	1292.	162.	229.	114.	148.	
WEST	0.	0.	12.	25.	36.	45.	51.	53.	112.	161.	190.	191.	136.	0.	0.	0.	0.	1012.	143.	195.	105.	131.	
NORTHWEST	0.	0.	12.	25.	36.	45.	51.	53.	51.	45.	80.	102.	86.	0.	0.	0.	0.	586.	114.	144.	90.	105.	
NORTH	0.	0.	12.	25.	36.	45.	51.	53.	51.	45.	36.	25.	12.	0.	0.	0.	0.	391.	100.	121.	83.	94.	
NORTHEAST	0.	0.	86.	102.	80.	45.	51.	53.	51.	45.	36.	25.	12.	0.	0.	0.	0.	586.	114.	144.	90.	105.	
EAST	0.	0.	136.	191.	190.	161.	112.	53.	51.	45.	36.	25.	12.	0.	0.	0.	0.	1012.	143.	195.	105.	131.	
SOUTHEAST	0.	0.	113.	183.	211.	212.	192.	155.	105.	49.	36.	25.	12.	0.	0.	0.	0.	1292.	162.	229.	114.	148.	
HORIZ.	0.	0.	42.	105.	163.	208.	237.	246.	237.	208.	163.	105.	42.	0.	0.	0.	0.	1758.	193.	285.	130.	176.	





ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	158.	139.	129.	119.	115.	124.	135.	151.	168.	173.	166.	170.	146.
SOUTHWEST	129.	122.	124.	127.	129.	141.	151.	160.	162.	153.	138.	137.	139.
WEST	83.	93.	108.	124.	134.	150.	156.	156.	143.	120.	94.	84.	120.
NORTHWEST	53.	67.	83.	105.	120.	136.	141.	134.	114.	89.	66.	54.	97.
NORTH	51.	61.	72.	87.	103.	117.	120.	113.	100.	83.	64.	53.	85.
NORTHEAST	53.	67.	83.	105.	120.	136.	141.	134.	114.	89.	66.	54.	97.
EAST	83.	93.	108.	124.	134.	150.	156.	156.	143.	120.	94.	84.	120.
SOUTHEAST	129.	122.	124.	127.	129.	141.	151.	160.	162.	153.	138.	137.	139.
HORIZ.	111.	128.	151.	175.	191.	215.	220.	216.	193.	157.	122.	109.	166.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	259.	220.	196.	169.	153.	159.	174.	204.	241.	264.	264.	278.	215.
SOUTHWEST	206.	190.	186.	184.	177.	190.	202.	220.	229.	227.	213.	218.	204.
WEST	123.	138.	157.	177.	185.	205.	212.	213.	195.	167.	133.	122.	169.
NORTHWEST	69.	89.	113.	143.	161.	181.	184.	173.	144.	112.	82.	68.	127.
NORTH	66.	78.	92.	111.	130.	147.	148.	137.	121.	101.	79.	66.	106.
NORTHEAST	69.	89.	113.	143.	161.	181.	184.	173.	144.	112.	82.	68.	127.
EAST	123.	138.	157.	177.	185.	205.	212.	213.	195.	167.	133.	122.	169.
SOUTHEAST	206.	190.	186.	184.	177.	190.	202.	220.	229.	227.	213.	218.	204.
HORIZ.	175.	200.	237.	271.	287.	321.	325.	318.	285.	235.	184.	167.	250.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	81.	80.	84.	88.	92.	102.	110.	117.	117.	108.	92.	85.	96.
SOUTHWEST	69.	73.	81.	92.	100.	112.	120.	122.	114.	99.	80.	72.	95.
WEST	51.	60.	73.	90.	103.	118.	123.	119.	105.	84.	62.	52.	87.
NORTHWEST	38.	48.	61.	80.	95.	109.	114.	107.	90.	70.	51.	40.	75.
NORTH	38.	45.	55.	70.	84.	98.	102.	96.	83.	67.	50.	40.	69.
NORTHEAST	38.	48.	61.	80.	95.	109.	114.	107.	90.	70.	51.	40.	75.
EAST	51.	60.	73.	90.	103.	118.	123.	119.	105.	84.	62.	52.	87.
SOUTHEAST	69.	73.	81.	92.	100.	112.	120.	122.	114.	99.	80.	72.	95.
HORIZ.	62.	75.	95.	119.	137.	158.	161.	152.	130.	101.	74.	61.	110.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	123.	118.	118.	115.	114.	123.	133.	146.	154.	149.	132.	128.	129.
SOUTHWEST	101.	104.	113.	123.	128.	142.	150.	155.	148.	133.	111.	104.	126.
WEST	67.	80.	98.	120.	133.	151.	156.	151.	131.	105.	78.	67.	111.
NORTHWEST	45.	58.	76.	101.	119.	137.	139.	129.	105.	81.	57.	46.	91.
NORTH	43.	53.	66.	83.	101.	116.	118.	109.	94.	75.	56.	45.	80.
NORTHEAST	45.	58.	76.	101.	119.	137.	139.	129.	105.	81.	57.	46.	91.
EAST	67.	80.	98.	120.	133.	151.	156.	151.	131.	105.	78.	67.	111.
SOUTHEAST	101.	104.	113.	123.	128.	142.	150.	155.	148.	133.	111.	104.	126.
HORIZ.	88.	108.	138.	172.	193.	222.	223.	209.	176.	136.	99.	84.	154.

LOCATION	EAST LANSING, MICHIGAN				LATITUDE 42 DEGREES 44 MINUTES																	
MONTH 1	H0 1279.	T00 26.	T0T 24.	KT	.350	KD	.181															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD
SOUTH	0.	0.	0.	0.	0.	26.	62.	85.	99.	104.	99.	85.	62.	26.	0.	0.	0.	649.	79.	122.	45.	62.
SOUTHWEST	0.	0.	0.	0.	0.	6.	16.	40.	63.	81.	92.	93.	80.	40.	0.	0.	0.	512.	68.	102.	40.	54.
WEST	0.	0.	0.	0.	0.	6.	15.	21.	25.	27.	46.	59.	60.	34.	0.	0.	0.	293.	50.	70.	3.	41.
NORTHWEST	0.	0.	0.	0.	0.	6.	15.	21.	25.	27.	25.	21.	15.	12.	0.	0.	0.	167.	40.	51.	29.	34.
NORTH	0.	0.	0.	0.	0.	6.	15.	21.	25.	27.	25.	21.	15.	6.	0.	0.	0.	161.	39.	50.	29.	33.
NORTHEAST	0.	0.	0.	0.	0.	12.	15.	21.	25.	27.	25.	21.	15.	6.	0.	0.	0.	167.	40.	51.	29.	34.
EAST	0.	0.	0.	0.	0.	34.	60.	59.	46.	27.	25.	21.	15.	6.	0.	0.	0.	293.	50.	70.	33.	41.
SOUTHEAST	0.	0.	0.	0.	0.	40.	80.	93.	92.	81.	63.	40.	16.	6.	0.	0.	0.	512.	68.	102.	40.	54.
HORIZ.	0.	0.	0.	0.	0.	13.	39.	60.	73.	78.	73.	60.	39.	13.	0.	0.	0.	449.	63.	93.	38.	50.
MONTH 2	H0 1859.	T00 26.	T0T 24.	KT	.431	KD	.185															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD
SOUTH	0.	0.	0.	0.	8.	54.	89.	114.	130.	136.	130.	114.	89.	54.	8.	0.	0.	926.	93.	148.	54.	78.
SOUTHWEST	0.	0.	0.	0.	3.	14.	24.	49.	81.	107.	124.	131.	123.	93.	18.	0.	0.	766.	82.	127.	49.	69.
WEST	0.	0.	0.	0.	3.	14.	24.	31.	36.	37.	67.	89.	98.	87.	19.	0.	0.	504.	63.	92.	40.	54.
NORTHWEST	0.	0.	0.	0.	3.	14.	24.	31.	36.	37.	36.	31.	30.	37.	11.	0.	0.	290.	47.	64.	33.	41.
NORTH	0.	0.	0.	0.	3.	14.	24.	31.	36.	37.	36.	31.	24.	14.	3.	0.	0.	252.	45.	59.	32.	39.
NORTHEAST	0.	0.	0.	0.	11.	37.	30.	31.	36.	37.	36.	31.	24.	14.	3.	0.	0.	290.	47.	64.	33.	41.
EAST	0.	0.	0.	0.	19.	87.	98.	89.	67.	37.	36.	31.	24.	14.	3.	0.	0.	504.	63.	92.	40.	54.
SOUTHEAST	0.	0.	0.	0.	18.	93.	123.	131.	124.	107.	81.	49.	24.	14.	3.	0.	0.	766.	82.	127.	49.	69.
HORIZ.	0.	0.	0.	0.	6.	40.	74.	101.	118.	123.	118.	101.	74.	40.	6.	0.	0.	801.	84.	131.	50.	71.
MONTH 3	H0 2516.	T00 36.	T0T 33.	KT	.456	KD	.186															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD
SOUTH	0.	0.	0.	0.	23.	58.	90.	114.	130.	135.	130.	114.	90.	58.	23.	0.	0.	966.	97.	148.	64.	89.
SOUTHWEST	0.	0.	0.	0.	11.	22.	32.	47.	81.	109.	129.	137.	133.	113.	70.	0.	0.	885.	92.	139.	62.	85.
WEST	0.	0.	0.	0.	11.	22.	32.	40.	45.	46.	78.	104.	118.	115.	81.	0.	0.	693.	80.	116.	55.	74.
NORTHWEST	0.	0.	0.	0.	11.	22.	32.	40.	45.	46.	45.	40.	52.	62.	52.	0.	0.	448.	64.	88.	48.	59.
NORTH	0.	0.	0.	0.	11.	22.	32.	40.	45.	46.	45.	40.	32.	22.	11.	0.	0.	347.	58.	76.	44.	53.
NORTHEAST	0.	0.	0.	0.	52.	62.	52.	40.	45.	46.	45.	40.	32.	22.	11.	0.	0.	448.	64.	88.	48.	59.
EAST	0.	0.	0.	0.	81.	115.	118.	104.	78.	46.	45.	40.	32.	22.	11.	0.	0.	693.	80.	116.	55.	74.
SOUTHEAST	0.	0.	0.	0.	70.	113.	133.	137.	129.	109.	81.	47.	32.	22.	11.	0.	0.	885.	92.	139.	62.	85.
HORIZ.	0.	0.	0.	0.	30.	70.	106.	134.	152.	158.	152.	134.	106.	70.	30.	0.	0.	1146.	100.	169.	70.	100.

LOCATION	EAST LANSING, MICHIGAN										LATITUDE 42 DEGREES 44 MINUTES											
MONTH	4	HO	3178.	TOD	48.	TOT	45.	KT	.406	KD	.183											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAT6D	SAG/ALL DAY SATGS	SAT6D
SOUTH	0.	0.	7.	20.	45.	69.	89.	101.	105.	101.	89.	69.	45.	20.	7.	0.	0.	766.	92.	128.	70.	90.
SOUTHWEST	0.	0.	7.	18.	29.	38.	45.	67.	89.	105.	112.	109.	95.	70.	29.	0.	0.	811.	95.	132.	71.	93.
WEST	0.	0.	7.	18.	29.	38.	45.	49.	50.	76.	95.	107.	106.	90.	43.	0.	0.	752.	91.	126.	69.	89.
NORTHWEST	0.	0.	7.	18.	29.	38.	45.	49.	50.	49.	49.	64.	72.	68.	36.	0.	0.	574.	81.	108.	64.	79.
NORTH	0.	0.	13.	18.	29.	38.	45.	49.	50.	49.	45.	38.	29.	18.	13.	0.	0.	432.	73.	93.	59.	70.
NORTHEAST	0.	0.	36.	68.	72.	64.	49.	50.	49.	45.	38.	29.	18.	7.	0.	0.	0.	574.	81.	108.	64.	79.
EAST	0.	0.	43.	90.	106.	107.	95.	76.	50.	49.	45.	38.	29.	18.	7.	0.	0.	752.	91.	126.	69.	89.
SOUTHEAST	0.	0.	29.	70.	95.	109.	112.	105.	89.	67.	45.	38.	29.	18.	7.	0.	0.	811.	95.	132.	71.	93.
HORIZ.	0.	0.	16.	51.	86.	117.	140.	155.	160.	155.	140.	117.	86.	51.	16.	0.	0.	1291.	122.	182.	87.	121.
MONTH	5	HO	3608.	TOD	60.	TOT	56.	KT	.489	KD	.187											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAT6D	SAG/ALL DAY SATGS	SAT6D
SOUTH	0.	3.	13.	25.	43.	71.	93.	108.	113.	108.	93.	71.	43.	25.	13.	3.	0.	824.	106.	141.	85.	106.
SOUTHWEST	0.	3.	13.	25.	35.	45.	52.	68.	87.	117.	127.	126.	113.	88.	50.	5.	0.	964.	114.	155.	89.	115.
WEST	0.	3.	13.	25.	35.	45.	52.	56.	58.	91.	117.	134.	138.	124.	85.	8.	0.	983.	115.	157.	90.	116.
NORTHWEST	0.	3.	13.	25.	35.	45.	52.	56.	58.	56.	69.	89.	102.	102.	78.	8.	0.	790.	108.	138.	84.	104.
NORTH	0.	5.	33.	34.	35.	45.	52.	56.	58.	56.	52.	45.	35.	34.	33.	5.	0.	578.	95.	117.	76.	91.
NORTHEAST	0.	8.	78.	102.	102.	89.	69.	56.	58.	56.	52.	45.	35.	25.	13.	3.	0.	790.	104.	138.	84.	104.
EAST	0.	8.	85.	124.	138.	134.	117.	91.	58.	56.	52.	45.	35.	25.	13.	3.	0.	983.	115.	157.	90.	116.
SOUTHEAST	0.	5.	50.	88.	113.	126.	127.	117.	97.	68.	52.	45.	35.	25.	13.	3.	0.	964.	114.	155.	89.	115.
HORIZ.	0.	5.	37.	79.	120.	155.	183.	200.	206.	200.	183.	155.	120.	79.	37.	5.	0.	1764.	159.	234.	117.	163.
MONTH	6	HO	3765.	TOD	70.	TOT	67.	KT	.508	KD	.187											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAT6D	SAG/ALL DAY SATGS	SAT6D
SOUTH	0.	5.	15.	27.	40.	68.	90.	105.	110.	105.	90.	68.	40.	27.	15.	5.	0.	808.	114.	148.	95.	116.
SOUTHWEST	0.	5.	15.	27.	37.	46.	54.	66.	95.	116.	128.	127.	115.	90.	54.	12.	0.	986.	124.	165.	101.	127.
WEST	0.	5.	15.	27.	37.	46.	54.	58.	60.	94.	122.	139.	144.	132.	96.	24.	0.	1053.	127.	171.	103.	131.
NORTHWEST	0.	5.	15.	27.	37.	46.	54.	58.	60.	58.	76.	97.	111.	112.	91.	26.	0.	872.	118.	154.	97.	120.
NORTH	0.	15.	41.	42.	37.	46.	54.	58.	60.	58.	54.	46.	37.	42.	41.	15.	0.	646.	105.	132.	90.	106.
NORTHEAST	0.	26.	91.	112.	111.	97.	76.	58.	60.	58.	54.	46.	37.	27.	15.	5.	0.	872.	118.	154.	97.	120.
EAST	0.	24.	96.	132.	144.	139.	122.	94.	60.	58.	54.	46.	37.	27.	15.	5.	0.	1053.	127.	171.	103.	131.
SOUTHEAST	0.	12.	54.	90.	115.	127.	128.	116.	95.	66.	54.	46.	37.	27.	15.	5.	0.	986.	124.	165.	101.	127.
HORIZ.	0.	10.	45.	88.	130.	167.	195.	213.	219.	213.	195.	167.	130.	88.	45.	10.	0.	1913.	174.	253.	133.	183.



[illegible]

MONTH	B	H0	3156.	T00	72.	TOT	69.	KT	.498	KD	.188													
ORIENTATION																								
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY			
												HOURLY SOLAR RADIATION								SATGS SATGD SATGS SATGD				
SOUTH	0.	0.	8.	21.	53.	84.	109.	125.	131.	125.	109.	84.	53.	21.	8.	0.	0.	931.	129.	172.	101.	125.		
SOUTHWEST	0.	0.	8.	19.	31.	41.	48.	78.	108.	130.	141.	139.	122.	89.	34.	0.	0.	987.	133.	178.	103.	129.		
WEST	0.	0.	8.	19.	31.	41.	48.	53.	55.	90.	119.	136.	137.	115.	52.	0.	0.	904.	127.	169.	100.	124.		
NORTHWEST	0.	0.	8.	19.	31.	41.	48.	53.	55.	53.	55.	77.	90.	86.	44.	0.	0.	660.	112.	143.	92.	109.		
NORTH	0.	15.	19.	31.	41.	48.	53.	55.	53.	53.	48.	41.	31.	19.	15.	0.	0.	468.	101.	123.	85.	97.		
NORTHEAST	0.	0.	44.	86.	90.	77.	55.	53.	55.	53.	48.	41.	31.	19.	8.	0.	0.	660.	112.	143.	92.	109.		
EAST	0.	0.	52.	115.	137.	136.	119.	90.	55.	53.	48.	41.	31.	19.	8.	0.	0.	904.	127.	169.	100.	124.		
SOUTHEAST	0.	0.	34.	89.	122.	139.	141.	130.	108.	78.	48.	41.	31.	19.	8.	0.	0.	987.	132.	178.	103.	129.		
ORIZ.	0.	0.	18.	60.	104.	142.	171.	191.	198.	191.	172.	142.	104.	60.	18.	0.	0.	1572.	168.	241.	123.	164.		

MONTH	9	H0	2506.	T00	65.	T0T	62.	KT	.493	KD	.198											
ORIENTATION																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
HOURLY SOLAR RADIATION																						
SOUTH	0.	0.	0.	24.	62.	97.	124.	141.	147.	141.	124.	97.	62.	24.	0.	0.	0.	1045.	136.	190.	98.	125.
SOUTHWEST	0.	0.	0.	11.	23.	33.	49.	87.	118.	140.	150.	145.	122.	73.	0.	0.	0.	954.	130.	180.	94.	119.
WEST	0.	0.	0.	11.	23.	33.	41.	46.	48.	44.	113.	128.	125.	86.	0.	0.	0.	738.	115.	154.	87.	106.
NORTHWEST	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	56.	67.	55.	0.	0.	0.	468.	97.	121.	78.	90.
NORTH	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.	357.	97.	108.	74.	83.
NORTHEAST	0.	0.	0.	55.	67.	56.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.	468.	97.	121.	78.	90.
EAST	0.	0.	0.	86.	128.	128.	113.	84.	48.	46.	41.	33.	23.	11.	0.	0.	0.	738.	115.	154.	87.	106.
SOUTHEAST	0.	0.	0.	73.	122.	145.	150.	140.	118.	87.	49.	33.	23.	11.	0.	0.	0.	954.	130.	180.	94.	119.
NORTIZ.	0.	0.	1.	31.	75.	114.	145.	165.	171.	165.	145.	114.	75.	31.	1.	0.	0.	1234.	149.	213.	104.	136.

LOCATION EAST LANSING, MICHIGAN LATITUDE 42 DEGREES 44 MINUTES

MONTH	10	HO	1825.	TOD	53.	TOT	50.	KT	.456	KD	.186	DAILY TOTAL RADIATION		SAG/DAYTIME SAT6S		SAG/ALL DAY SAT6S	
ORIENTATION												SAT6S		SAT6S		SAT6S	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	7.	56.	94.	123.	140.	146.	140.	123.	94.	56.	7.	0.	0.	0.
SOUTHWEST	0.	0.	0.	3.	14.	24.	51.	86.	114.	134.	140.	131.	97.	14.	0.	0.	0.
WEST	0.	0.	0.	3.	14.	24.	31.	36.	38.	70.	94.	104.	90.	15.	0.	0.	0.
NORTHWEST	0.	0.	0.	3.	14.	24.	31.	36.	38.	36.	31.	31.	38.	9.	0.	0.	0.
NORTH	0.	0.	0.	3.	14.	24.	31.	36.	38.	36.	31.	24.	14.	3.	0.	0.	0.
NORTHEAST	0.	0.	0.	9.	38.	31.	31.	36.	38.	36.	31.	24.	14.	3.	0.	0.	0.
EAST	0.	0.	0.	15.	90.	104.	94.	70.	38.	36.	31.	24.	14.	3.	0.	0.	0.
SOUTHEAST	0.	0.	0.	14.	97.	131.	140.	134.	114.	86.	51.	24.	14.	3.	0.	0.	0.
HORIZ.	0.	0.	0.	6.	40.	76.	105.	123.	130.	123.	105.	76.	40.	6.	0.	0.	0.

MONTH 11	HO 1268.	TOD	40.	TOT	38.	KT	.333	KD	.180															
ORIENTATION	4	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY			
		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		SAT6S	SAT6S	SAT6S	SAT6S		
SOUTH	0.	0.	0.	23.	57.	79.	92.	96.	92.	79.	57.	23.	0.	0.	0.	0.	0.	0.	0.	595.	89.	129.	57.	73.
SOUTHWEST	0.	0.	0.	6.	16.	38.	59.	75.	85.	86.	73.	34.	0.	0.	0.	0.	0.	0.	0.	472.	79.	110.	53.	65.
WEST	0.	0.	0.	6.	14.	21.	25.	26.	43.	55.	55.	30.	0.	0.	0.	0.	0.	0.	0.	274.	62.	81.	47.	54.
NORTHWEST	0.	0.	0.	6.	14.	21.	25.	26.	25.	21.	14.	11.	0.	0.	0.	0.	0.	0.	0.	162.	53.	64.	43.	47.
NORTH	0.	0.	0.	6.	14.	21.	25.	26.	25.	21.	14.	6.	0.	0.	0.	0.	0.	0.	0.	157.	53.	63.	43.	47.
NORTHEAST	0.	0.	0.	11.	14.	21.	25.	26.	25.	21.	14.	6.	0.	0.	0.	0.	0.	0.	0.	162.	53.	64.	43.	47.
EAST	0.	0.	0.	30.	55.	55.	43.	26.	25.	21.	14.	6.	0.	0.	0.	0.	0.	0.	0.	274.	62.	81.	47.	54.
SOUTHEAST	0.	0.	0.	34.	73.	86.	85.	75.	59.	38.	16.	6.	0.	0.	0.	0.	0.	0.	0.	472.	79.	110.	53.	65.
HORIZ.	0.	0.	0.	13.	37.	56.	69.	74.	69.	56.	37.	13.	0.	0.	0.	0.	0.	0.	0.	423.	75.	103.	51.	63.

MONTH 12	HO 1062.	TOD	29.	TOT	27.	KT	.349	KD	.181												
ORIENTATION										DAILY TOTAL RADIATION		SAG/DAYTIME SAT6S		SAG/ALL DAY SAT6S							
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
<hr/>																					
SOUTH	0.	0.	0.	12.	57.	84.	99.	104.	99.	84.	57.	12.	0.	0.	0.	0.	608.	82.	125.	47.	63.
SOUTHWEST	0.	0.	0.	3.	15.	39.	62.	80.	91.	90.	73.	18.	0.	0.	0.	0.	471.	70.	103.	42.	55.
WEST	0.	0.	0.	3.	12.	18.	22.	24.	42.	54.	52.	15.	0.	0.	0.	0.	243.	50.	67.	35.	41.
NORTHWEST	0.	0.	0.	3.	12.	18.	22.	24.	22.	18.	12.	5.	0.	0.	0.	0.	136.	41.	50.	31.	35.
NORTH	0.	0.	0.	3.	12.	18.	22.	24.	22.	18.	12.	3.	0.	0.	0.	0.	134.	41.	50.	31.	35.
NORTHEAST	0.	0.	0.	5.	12.	18.	22.	24.	22.	18.	12.	3.	0.	0.	0.	0.	136.	41.	50.	31.	35.
EAST	0.	0.	0.	15.	52.	54.	42.	24.	22.	18.	12.	3.	0.	0.	0.	0.	243.	50.	67.	35.	41.
SOUTHEAST	0.	0.	0.	18.	73.	90.	91.	80.	62.	39.	15.	3.	0.	0.	0.	0.	471.	70.	103.	42.	55.
HORIZ.	0.	0.	0.	7.	30.	51.	64.	69.	64.	51.	30.	7.	0.	0.	0.	0.	371.	61.	88.	39.	49.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	79.	93.	97.	92.	106.	114.	122.	129.	136.	125.	89.	82.	105.
SOUTHWEST	68.	82.	92.	95.	114.	124.	131.	132.	130.	112.	79.	70.	102.
WEST	50.	63.	80.	91.	115.	127.	132.	127.	115.	91.	62.	50.	92.
NORTHWEST	40.	47.	64.	81.	104.	118.	120.	112.	97.	74.	53.	41.	79.
NORTH	39.	45.	58.	73.	92.	105.	107.	101.	89.	72.	53.	41.	73.
NORTHEAST	40.	47.	64.	81.	104.	118.	120.	112.	97.	74.	53.	41.	79.
EAST	50.	63.	80.	91.	115.	127.	132.	127.	115.	91.	62.	50.	92.
SOUTHEAST	68.	82.	92.	95.	114.	124.	131.	132.	130.	112.	79.	70.	102.
HORIZ.	63.	84.	109.	122.	159.	174.	178.	168.	149.	114.	75.	61.	121.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	122.	148.	148.	128.	141.	148.	159.	172.	190.	183.	129.	125.	149.
SOUTHWEST	102.	127.	139.	132.	155.	165.	174.	178.	180.	160.	110.	103.	144.
WEST	70.	92.	116.	126.	157.	171.	176.	169.	154.	122.	81.	67.	125.
NORTHWEST	51.	64.	88.	108.	138.	154.	155.	143.	121.	92.	64.	50.	102.
NORTH	50.	59.	76.	93.	117.	132.	133.	123.	108.	87.	63.	50.	91.
NORTHEAST	51.	64.	88.	108.	138.	154.	155.	143.	121.	92.	64.	50.	102.
EAST	70.	92.	116.	126.	157.	171.	176.	169.	154.	122.	81.	67.	125.
SOUTHEAST	102.	127.	139.	132.	155.	165.	174.	178.	180.	160.	110.	103.	144.
HORIZ.	93.	131.	169.	182.	234.	253.	258.	241.	213.	163.	103.	88.	177.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	45.	54.	64.	70.	85.	95.	100.	101.	98.	82.	57.	47.	75.
SOUTHWEST	40.	49.	62.	71.	89.	101.	105.	103.	94.	76.	53.	42.	74.
WEST	33.	40.	55.	69.	90.	103.	106.	100.	87.	67.	47.	35.	69.
NORTHWEST	29.	33.	48.	64.	84.	97.	99.	92.	78.	60.	43.	31.	63.
NORTH	29.	32.	44.	59.	76.	90.	91.	85.	74.	59.	43.	31.	59.
NORTHEAST	29.	33.	48.	64.	84.	97.	99.	92.	78.	60.	43.	31.	63.
EAST	33.	40.	55.	69.	90.	103.	106.	100.	87.	67.	47.	35.	69.
SOUTHEAST	40.	49.	62.	71.	89.	101.	105.	103.	94.	76.	53.	42.	74.
HORIZ.	38.	50.	70.	87.	117.	133.	134.	123.	104.	77.	51.	30.	85.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	62.	78.	89.	90.	106.	116.	123.	125.	125.	108.	73.	63.	96.
SOUTHWEST	54.	69.	85.	93.	115.	127.	132.	129.	119.	98.	65.	55.	95.
WEST	41.	54.	74.	89.	116.	131.	133.	124.	106.	81.	54.	41.	87.
NORTHWEST	34.	41.	59.	79.	104.	120.	121.	109.	90.	67.	47.	35.	76.
NORTH	33.	39.	53.	70.	91.	106.	107.	97.	83.	65.	47.	35.	69.
NORTHEAST	34.	41.	59.	79.	104.	120.	121.	109.	90.	67.	47.	35.	76.
EAST	41.	54.	74.	89.	116.	131.	133.	124.	106.	81.	54.	41.	87.
SOUTHEAST	54.	69.	85.	93.	115.	127.	132.	129.	119.	98.	65.	55.	95.
HORIZ.	50.	71.	100.	121.	163.	183.	183.	164.	136.	99.	63.	40.	115.

LOCATION		EAST WAREHAM, MASS.										LATITUDE 41 DEGREES 46 MINUTES																							
MONTH 1		HO 1333.		TOD		32.		TOT		32.		KT		.398		KD		.183																	
ORIENTATION		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20	
SOUTH		0.	0.	0.	0.	0.	0.	0.	34.	77.	104.	120.	126.	120.	104.	77.	34.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTHWEST		0.	0.	0.	0.	0.	0.	0.	7.	18.	46.	75.	97.	112.	114.	100.	53.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
WEST		0.	0.	0.	0.	0.	0.	0.	7.	16.	23.	27.	29.	54.	71.	74.	45.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTHWEST		0.	0.	0.	0.	0.	0.	0.	7.	16.	23.	27.	29.	27.	23.	16.	15.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTH		0.	0.	0.	0.	0.	0.	0.	7.	16.	23.	27.	29.	27.	23.	16.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTHEAST		0.	0.	0.	0.	0.	0.	0.	15.	16.	23.	27.	29.	27.	23.	16.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
EAST		0.	0.	0.	0.	0.	0.	0.	45.	74.	71.	54.	29.	27.	23.	16.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTHEAST		0.	0.	0.	0.	0.	0.	0.	53.	100.	114.	112.	97.	75.	46.	18.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
HORIZ.		0.	0.	0.	0.	0.	0.	0.	16.	46.	71.	86.	92.	86.	71.	46.	16.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MONTH 2		HO 1908.		TOD		32.		TOT		31.		KT		.431		KD		.185																	
ORIENTATION		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20	
SOUTH		0.	0.	0.	0.	0.	9.	54.	89.	114.	130.	135.	130.	114.	89.	54.	9.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTHWEST		0.	0.	0.	0.	0.	4.	14.	24.	49.	81.	107.	124.	131.	123.	95.	21.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
WEST		0.	0.	0.	0.	0.	4.	14.	24.	32.	36.	38.	67.	89.	99.	88.	22.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTHWEST		0.	0.	0.	0.	0.	4.	14.	24.	32.	36.	38.	36.	32.	32.	38.	12.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTH		0.	0.	0.	0.	0.	4.	14.	24.	32.	36.	38.	36.	32.	24.	14.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTHEAST		0.	0.	0.	0.	0.	12.	38.	32.	32.	36.	38.	36.	32.	24.	14.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
EAST		0.	0.	0.	0.	0.	22.	88.	99.	89.	67.	38.	36.	32.	24.	14.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTHEAST		0.	0.	0.	0.	0.	21.	95.	123.	131.	124.	107.	81.	49.	24.	14.	4.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
HORIZ.		0.	0.	0.	0.	0.	7.	42.	76.	103.	120.	126.	120.	103.	76.	42.	7.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
MONTH 3		HO 2554.		TOD		39.		TOT		37.		KT		.469		KD		.186																	
ORIENTATION		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20	
SOUTH		0.	0.	0.	0.	0.	24.	60.	92.	117.	133.	139.	133.	117.	92.	60.	24.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTHWEST		0.	0.	0.	0.	0.	11.	23.	33.	48.	83.	112.	133.	142.	138.	117.	73.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
WEST		0.	0.	0.	0.	0.	11.	23.	33.	41.	46.	48.	81.	108.	122.	120.	85.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTHWEST		0.	0.	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	55.	65.	55.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTH		0.	0.	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
NORTHEAST		0.	0.	0.	0.	0.	55.	65.	55.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
EAST		0.	0.	0.	0.	0.	85.	120.	122.	108.	81.	48.	46.	41.	33.	23.	11.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
SOUTHEAST		0.	0.	0.	0.	0.	73.	117.	138.	142.	133.	112.	83.	48.	33.	23.	11.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
HORIZ.		0.	0.	0.	0.	0.	31.	73.	111.	140.	159.	165.	159.	140.	111.	73.	31.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.



LOCATION		EAST WAREHAM, MASS.		LATITUDE		41 DEGREES		46 MINUTES										
MONTH	4	HO	3199.	TOD	48.	TOT	44.	KT	.449	KD	.185							
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	7.	20.	49.	76.	97.	111.	116.	111.	97.	76.	49.	20.	7.	0.	0.	0.
SOUTHWEST	0.	0.	7.	19.	30.	39.	47.	71.	97.	116.	125.	123.	108.	80.	32.	0.	0.	0.
WEST	0.	0.	7.	19.	30.	39.	47.	52.	53.	53.	107.	121.	122.	103.	48.	0.	0.	0.
NORTHWEST	0.	0.	7.	19.	30.	39.	47.	52.	53.	52.	54.	72.	82.	78.	41.	0.	0.	0.
NORTH	0.	0.	14.	19.	30.	39.	47.	52.	53.	52.	47.	39.	30.	19.	14.	0.	0.	0.
NORTHEAST	0.	0.	41.	78.	82.	72.	54.	52.	53.	52.	47.	39.	30.	19.	7.	0.	0.	0.
EAST	0.	0.	48.	103.	122.	121.	107.	83.	53.	52.	47.	39.	30.	19.	7.	0.	0.	0.
SOUTHEAST	0.	0.	32.	80.	108.	123.	125.	116.	97.	71.	47.	39.	30.	19.	7.	0.	0.	0.
HORIZ.	0.	0.	17.	56.	95.	130.	157.	174.	180.	174.	157.	130.	95.	56.	17.	0.	0.	0.
DAILY TOTAL RADIATION																		
SOUTH																		
SOUTHWEST																		
WEST																		
NORTHWEST																		
NORTH																		
NORTHEAST																		
EAST																		
SOUTHEAST																		
HORIZ.																		
SAG/DAYTIME SATGS																		
SAG/ALL DAY SATGD																		
SOUTH																		
SOUTHWEST																		
WEST																		
NORTHWEST																		
NORTH																		
NORTHEAST																		
EAST																		
SOUTHEAST																		
HORIZ.																		
SAG/DAYTIME SATGS																		
SAG/ALL DAY SATGD																		
SOUTH																		
SOUTHWEST																		
WEST																		
NORTHWEST																		
NORTH																		
NORTHEAST																		
EAST																		
SOUTHEAST																		
HORIZ.																		
SAG/DAYTIME SATGS																		
SAG/ALL DAY SATGD																		
SOUTH																		
SOUTHWEST																		
WEST																		
NORTHWEST																		
NORTH																		
NORTHEAST																		
EAST																		
SOUTHEAST																		
HORIZ.																		
SAG/DAYTIME SATGS																		
SAG/ALL DAY SATGD																		
SOUTH																		
SOUTHWEST																		
WEST																		
NORTHWEST																		
NORTH																		
NORTHEAST																		
EAST																		
SOUTHEAST																		
HORIZ.																		
SAG/DAYTIME SATGS																		
SAG/ALL DAY SATGD																		
SOUTH																		
SOUTHWEST																		
WEST																		
NORTHWEST																		
NORTH																		
NORTHEAST													</					



LOCATION		EAST WAREHAM, MASS.		LATITUDE		41 DEGREES		46 MINUTES																			
MONTH	10	HO	1874.	TOD	56.	TOT	53.	KT	.496	KD	.188																
ORIENTATION																		DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGD					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20											
SOUTH	0.	0.	9.	63.	105.	136.	156.	162.	156.	136.	105.	63.	9.	0.	0.	0.	1099.	135.	200.	88.	117.						
SOUTHWEST	0.	0.	3.	15.	25.	55.	94.	126.	148.	157.	147.	111.	19.	0.	0.	0.	900.	121.	174.	82.	105.						
WEST	0.	0.	3.	15.	25.	33.	38.	40.	77.	105.	118.	102.	20.	0.	0.	0.	576.	97.	131.	71.	87.						
NORTHWEST	0.	0.	3.	15.	25.	33.	38.	40.	38.	33.	34.	43.	11.	0.	0.	0.	314.	79.	97.	63.	71.						
NORTH	0.	0.	3.	15.	25.	33.	38.	40.	38.	33.	25.	15.	3.	0.	0.	0.	269.	75.	91.	62.	69.						
NORTHEAST	0.	0.	11.	43.	34.	33.	38.	40.	38.	33.	25.	15.	3.	0.	0.	0.	314.	79.	97.	63.	71.						
EAST	0.	0.	20.	102.	118.	105.	77.	40.	38.	33.	25.	15.	3.	0.	0.	0.	576.	97.	131.	71.	87.						
SOUTHEAST	0.	0.	19.	111.	147.	157.	148.	126.	94.	55.	25.	15.	3.	0.	0.	0.	900.	121.	174.	82.	105.						
HORIZ.	0.	0.	7.	45.	85.	117.	138.	145.	138.	117.	85.	45.	7.	0.	0.	0.	929.	123.	177.	83.	107.						

MONTH	11	HO	1321.	TOD	46.	TOT	44.	HOURLY SOLAR RADIATION					KT					.431	KD	.185				
ORIENTATION																								
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20								
SOUTH	0.	0.	0.	0.	36.	85.	117.	135.	141.	135.	117.	85.	36.	0.	0.	0.	887.	118.	177.	73.	96.			
SOUTHWEST	0.	0.	0.	0.	7.	18.	51.	82.	108.	125.	128.	112.	57.	0.	0.	0.	689.	102.	148.	67.	85.			
WEST	0.	0.	0.	0.	7.	16.	24.	28.	30.	58.	78.	82.	49.	0.	0.	0.	372.	76.	101.	56.	66.			
NORTHWEST	0.	0.	0.	0.	7.	16.	24.	28.	30.	28.	24.	16.	7.	0.	0.	0.	188.	61.	74.	51.	55.			
NORTH	0.	0.	0.	0.	7.	16.	24.	28.	30.	28.	24.	16.	7.	0.	0.	0.	179.	61.	72.	50.	55.			
NORTHEAST	0.	0.	0.	0.	16.	16.	24.	28.	30.	28.	24.	16.	7.	0.	0.	0.	188.	61.	74.	51.	55.			
EAST	0.	0.	0.	0.	49.	82.	78.	58.	30.	28.	24.	16.	7.	0.	0.	0.	372.	76.	101.	56.	66.			
SOUTHEAST	0.	0.	0.	0.	57.	112.	128.	125.	108.	82.	51.	18.	7.	0.	0.	0.	689.	102.	148.	67.	85.			
HORIZ.	0.	0.	0.	0.	17.	49.	76.	94.	99.	94.	76.	49.	17.	0.	0.	0.	570.	92.	130.	63.	78.			
DAILY TOTAL RADIATION																	SAG/DAYTIME SATGS	SAG/ALL DAY SATGD						
																	887.	118.	177.	73.	96.			
																	689.	102.	148.	67.	85.			
																	372.	76.	101.	56.	66.			
																	188.	61.	74.	51.	55.			
																	179.	61.	72.	50.	55.			
																	188.	61.	74.	51.	55.			
																	372.	76.	101.	56.	66.			
																	689.	102.	148.	67.	85.			
																	570.	92.	130.	63.	78.			

MONTH	12	HO	1116.	TOD	35.	TOT	35.	KT	.461	KD	.186									
ORIENTATION																				
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
SOUTH	0.	0.	0.	0.	23.	90.	128.	150.	157.	150.	128.	90.	23.	0.	0.	0.				
SOUTHWEST	0.	0.	0.	0.	4.	19.	55.	90.	119.	137.	139.	115.	35.	0.	0.	0.				
WEST	0.	0.	0.	0.	4.	13.	21.	26.	27.	59.	80.	81.	29.	0.	0.	0.				
NORTHWEST	0.	0.	0.	0.	4.	13.	21.	26.	27.	26.	21.	13.	8.	0.	0.	0.				
NORTH	0.	0.	0.	0.	4.	13.	21.	26.	27.	26.	21.	13.	4.	0.	0.	0.				
NORTHEAST	0.	0.	0.	0.	8.	13.	21.	26.	27.	26.	21.	13.	4.	0.	0.	0.				
EAST	0.	0.	0.	0.	29.	81.	80.	59.	27.	26.	21.	13.	4.	0.	0.	0.				
SOUTHEAST	0.	0.	0.	0.	35.	115.	139.	137.	119.	90.	55.	19.	4.	0.	0.	0.				
HORIZ.	0.	0.	0.	0.	9.	41.	70.	89.	95.	89.	70.	41.	9.	0.	0.	0.				
DAILY TOTAL RADIATION												938.	SAG/DAYTIME SATGS				115.	181.	65.	90.
												713.	SAG/ALL DAY SATGS				96.	146.	58.	77.
												342.					64.	88.	46.	55.
												160.					49.	60.	40.	45.
												156.					48.	59.	40.	44.
												160.					49.	60.	40.	45.
												342.					64.	88.	46.	55.
												713.					96.	146.	58.	77.
												515.					79.	115.	52.	65.

LOCATION EAST WAREHAM, MASS. LATITUDE 41 DEGREES 46 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	97.	98.	102.	96.	104.	111.	121.	128.	139.	135.	118.	115.	114.
SOUTHWEST	83.	87.	97.	99.	112.	122.	130.	131.	133.	121.	102.	96.	109.
WEST	60.	68.	85.	96.	113.	126.	131.	127.	118.	97.	76.	64.	97.
NORTHWEST	47.	53.	69.	84.	103.	116.	120.	113.	99.	79.	61.	49.	83.
NORTH	46.	50.	62.	74.	91.	103.	107.	101.	91.	75.	61.	48.	76.
NORTHEAST	47.	53.	69.	84.	103.	116.	120.	113.	99.	79.	61.	49.	83.
EAST	60.	68.	85.	96.	113.	126.	131.	127.	118.	97.	76.	64.	97.
SOUTHEAST	83.	87.	97.	99.	112.	122.	130.	131.	133.	121.	102.	96.	109.
HORIZ.	75.	91.	115.	131.	157.	174.	178.	168.	154.	123.	92.	79.	128.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	150.	152.	154.	135.	138.	145.	157.	170.	195.	200.	177.	181.	163.
SOUTHWEST	124.	132.	145.	141.	152.	163.	172.	176.	184.	174.	148.	146.	155.
WEST	83.	99.	122.	135.	155.	171.	175.	169.	158.	131.	101.	88.	132.
NORTHWEST	59.	70.	93.	113.	137.	153.	155.	143.	124.	97.	74.	60.	107.
NORTH	58.	65.	80.	95.	116.	130.	133.	123.	110.	91.	72.	59.	94.
NORTHEAST	59.	70.	93.	113.	137.	153.	155.	143.	124.	97.	74.	60.	107.
EAST	83.	99.	122.	135.	155.	171.	175.	169.	158.	131.	101.	88.	132.
SOUTHEAST	124.	132.	145.	141.	152.	163.	172.	176.	184.	174.	148.	146.	155.
HORIZ.	110.	139.	178.	198.	232.	256.	258.	240.	221.	177.	130.	115.	188.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	58.	61.	68.	70.	80.	88.	96.	98.	99.	88.	73.	65.	79.
SOUTHWEST	52.	56.	66.	72.	84.	95.	101.	100.	96.	82.	67.	58.	77.
WEST	43.	49.	60.	70.	85.	97.	102.	98.	88.	71.	56.	46.	72.
NORTHWEST	38.	41.	51.	64.	79.	91.	95.	90.	79.	63.	51.	40.	65.
NORTH	38.	39.	48.	58.	72.	83.	87.	83.	75.	62.	50.	40.	61.
NORTHEAST	38.	41.	51.	64.	79.	91.	95.	90.	79.	63.	51.	40.	65.
EAST	43.	48.	60.	70.	85.	97.	102.	98.	88.	71.	56.	46.	72.
SOUTHEAST	52.	56.	66.	72.	84.	95.	101.	100.	96.	82.	67.	58.	77.
HORIZ.	49.	57.	75.	90.	112.	128.	130.	120.	106.	83.	63.	52.	89.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	78.	85.	94.	92.	100.	109.	117.	122.	127.	117.	96.	90.	102.
SOUTHWEST	68.	76.	90.	96.	107.	121.	127.	125.	122.	105.	85.	77.	100.
WEST	52.	61.	78.	92.	110.	126.	128.	121.	108.	87.	66.	55.	90.
NORTHWEST	43.	48.	64.	80.	99.	114.	116.	107.	91.	71.	55.	45.	78.
NORTH	42.	46.	57.	70.	87.	100.	103.	95.	84.	69.	55.	44.	71.
NORTHEAST	43.	48.	64.	80.	99.	114.	116.	107.	91.	71.	55.	45.	78.
EAST	52.	61.	78.	92.	110.	126.	128.	121.	108.	87.	66.	55.	90.
SOUTHEAST	68.	76.	90.	96.	109.	121.	127.	125.	122.	105.	85.	77.	100.
HORIZ.	63.	79.	106.	127.	157.	179.	179.	161.	140.	107.	78.	65.	120.



LOCATION	EL PASO, TEXAS	LATITUDE	31 DEGREES	48 MINUTES
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[illegible]

MONTH	2	HO	2382.	T00	53.	T0T	49.	KT	.714	KD	.142										
ORIENTATION																					
HOURLY SOLAR RADIATION																					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS		
SOUTH	0.	0.	0.	36.	110.	164.	205.	230.	238.	230.	205.	164.	110.	36.	0.	0.	1726.	173.	270.	104.	150.
SOUTHWEST	0.	0.	0.	6.	19.	32.	63.	126.	183.	226.	251.	251.	214.	96.	0.	0.	1467.	155.	238.	96.	135.
WEST	0.	0.	0.	0.	6.	18.	32.	41.	47.	49.	118.	174.	209.	205.	104.	0.	1005.	123.	179.	81.	108.
NORTHWEST	0.	0.	0.	0.	6.	19.	32.	41.	47.	49.	47.	41.	63.	87.	54.	0.	487.	77.	114.	65.	77.
NORTH	0.	0.	0.	6.	19.	32.	41.	47.	49.	47.	41.	32.	19.	6.	0.	0.	340.	77.	96.	60.	69.
NORTHEAST	0.	0.	0.	54.	87.	63.	41.	47.	49.	47.	41.	32.	19.	6.	0.	0.	487.	87.	114.	65.	77.
EAST	0.	0.	0.	104.	205.	209.	174.	118.	49.	47.	41.	32.	19.	6.	0.	0.	1005.	123.	179.	81.	108.
SOUTHEAST	0.	0.	0.	96.	214.	251.	226.	183.	126.	63.	32.	19.	6.	0.	0.	0.	1467.	155.	238.	96.	135.
ORIZ.	0.	0.	0.	20.	91.	153.	211.	244.	255.	244.	211.	158.	91.	20.	0.	0.	1702.	171.	267.	104.	148.

[illegible]



LOCATION	EL PASO, TEXAS	LATITUDE	31 DEGREES	48 MINUTES
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[illegible][illegible][illegible]

LOCATION EL PASO, TEXAS LATITUDE 31 DEGREES 48 MINUTES

MONTH	10	H0	2347.	T00	69.	T0T	65.	HOURLY SOLAR RADIATION							KT	.695	KD	.150	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
								4	5	6	7	8	9	10						11	12	13	14
ORIENTATION																							
	SOUTH	0.	0.	0.	31.	103.	158.	222.	230.	222.	198.	158.	103.	31.	0.	0.	0.	1653.	184.	277.	118.	162.	
	SOUTHWEST	0.	0.	0.	6.	19.	32.	62.	123.	177.	219.	241.	239.	200.	81.	0.	0.	1399.	166.	245.	110.	147.	
	WEST	0.	0.	0.	6.	10.	32.	41.	47.	49.	115.	168.	198.	191.	87.	0.	0.	953.	135.	189.	96.	121.	
	NORTHWEST	0.	0.	0.	6.	19.	32.	41.	47.	49.	47.	41.	60.	81.	45.	0.	0.	470.	102.	128.	80.	93.	
	NORTH	0.	0.	0.	6.	19.	32.	41.	47.	49.	47.	41.	32.	19.	6.	0.	0.	340.	93.	112.	76.	85.	
	NORTHEAST	0.	0.	0.	45.	81.	60.	41.	47.	49.	47.	41.	32.	19.	6.	0.	0.	470.	102.	128.	80.	93.	
	EAST	0.	0.	0.	87.	191.	198.	168.	115.	49.	47.	41.	32.	19.	6.	0.	0.	953.	135.	189.	96.	121.	
	SOUTHEAST	0.	0.	0.	81.	200.	239.	241.	219.	177.	123.	62.	32.	19.	6.	0.	0.	1399.	166.	245.	110.	147.	
	HORIZ.	0.	0.	0.	18.	86.	151.	203.	235.	247.	235.	203.	151.	86.	18.	0.	0.	1632.	182.	275.	118.	160.	

[illegible]

MONTH	12	ORIENTATION	HO 1670.																TOT	HOURLY SOLAR RADIATION				KT	KD	.168	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY
			4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SATGS	SATGD	SATGS					SATGD		
		SOUTH	0.	0.	0.	0.	0.	89.	156.	197.	222.	230.	222.	197.	156.	89.	0.	0.	0.	0.	0.	0.	1557.	169.	268.	95.	135.			
		SOUTHWEST	0.	0.	0.	0.	0.	11.	27.	78.	129.	174.	206.	220.	207.	142.	0.	0.	0.	0.	0.	0.	1193.	141.	217.	83.	114.			
		WEST	0.	0.	0.	0.	0.	11.	22.	32.	37.	39.	92.	132.	150.	118.	0.	0.	0.	0.	0.	0.	633.	98.	138.	65.	82.			
		NORTHWEST	0.	0.	0.	0.	0.	11.	22.	32.	37.	39.	37.	32.	22.	31.	0.	0.	0.	0.	0.	0.	264.	69.	86.	53.	60.			
		NORTH	0.	0.	0.	0.	0.	11.	22.	32.	37.	39.	37.	32.	22.	11.	0.	0.	0.	0.	0.	0.	243.	67.	83.	53.	59.			
		NORTHEAST	0.	0.	0.	0.	0.	31.	22.	32.	37.	39.	37.	32.	22.	11.	0.	0.	0.	0.	0.	0.	264.	69.	86.	53.	60.			
		EAST	0.	0.	0.	0.	0.	118.	150.	132.	92.	39.	37.	32.	22.	11.	0.	0.	0.	0.	0.	0.	633.	98.	138.	65.	82.			
		SOUTHEAST	0.	0.	0.	0.	0.	142.	207.	220.	206.	174.	129.	78.	27.	11.	0.	0.	0.	0.	0.	0.	1193.	141.	217.	83.	114.			
		HORIZ.	0.	0.	0.	0.	0.	38.	93.	138.	166.	176.	166.	138.	93.	38.	0.	0.	0.	0.	0.	0.	1045.	130.	196.	78.	106.			



LOCATION EL PASO, TEXAS LATITUDE 31 DEGREES 48 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	177.	173.	152.	129.	122.	124.	129.	144.	171.	184.	176.	169.	154.
SOUTHWEST	148.	155.	150.	146.	147.	150.	149.	158.	169.	166.	149.	141.	152.
WEST	104.	123.	134.	146.	159.	165.	158.	159.	154.	135.	109.	98.	137.
NORTHWEST	70.	87.	102.	123.	142.	152.	145.	138.	124.	102.	79.	69.	111.
NORTH	67.	77.	85.	97.	116.	128.	124.	116.	107.	93.	76.	67.	96.
NORTHEAST	70.	87.	102.	123.	142.	152.	145.	138.	124.	102.	79.	69.	111.
EAST	104.	123.	134.	146.	159.	165.	158.	159.	154.	135.	109.	98.	137.
SOUTHEAST	148.	155.	150.	146.	147.	150.	149.	158.	169.	166.	149.	141.	152.
HORIZ.	143.	171.	194.	215.	237.	243.	226.	224.	215.	182.	146.	130.	194.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	284.	270.	228.	180.	157.	154.	163.	191.	242.	277.	274.	268.	224.
SOUTHWEST	231.	238.	225.	210.	201.	200.	198.	216.	238.	245.	226.	217.	220.
WEST	150.	179.	196.	211.	223.	227.	215.	216.	211.	189.	152.	138.	192.
NORTHWEST	89.	114.	138.	168.	194.	205.	192.	180.	158.	128.	98.	86.	146.
NORTH	84.	96.	106.	122.	146.	161.	154.	141.	129.	112.	93.	83.	119.
NORTHEAST	89.	114.	138.	168.	194.	205.	192.	180.	158.	128.	98.	86.	146.
EAST	150.	179.	196.	211.	223.	227.	215.	216.	211.	189.	152.	138.	192.
SOUTHEAST	231.	238.	225.	210.	201.	200.	198.	216.	238.	245.	226.	217.	220.
HORIZ.	222.	267.	305.	336.	360.	365.	333.	332.	319.	275.	220.	196.	294.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	99.	104.	101.	97.	98.	103.	107.	113.	121.	118.	103.	95.	105.
SOUTHWEST	87.	96.	100.	106.	112.	119.	118.	120.	120.	110.	92.	83.	105.
WEST	68.	81.	92.	106.	123.	128.	123.	121.	113.	96.	75.	65.	98.
NORTHWEST	53.	65.	76.	93.	110.	120.	116.	109.	98.	80.	62.	53.	86.
NORTH	52.	60.	68.	79.	94.	106.	104.	98.	89.	76.	61.	53.	78.
NORTHEAST	53.	65.	76.	93.	110.	120.	116.	109.	98.	80.	62.	53.	86.
EAST	68.	81.	92.	106.	119.	128.	123.	121.	113.	96.	75.	65.	99.
SOUTHEAST	87.	96.	100.	106.	112.	119.	118.	120.	120.	110.	92.	83.	105.
HORIZ.	85.	104.	122.	143.	164.	173.	162.	156.	143.	118.	91.	78.	128.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	145.	150.	140.	124.	118.	121.	126.	138.	157.	162.	145.	135.	138.
SOUTHWEST	122.	135.	138.	140.	144.	148.	146.	151.	155.	147.	125.	114.	139.
WEST	87.	108.	123.	141.	156.	164.	156.	152.	142.	121.	93.	82.	127.
NORTHWEST	61.	77.	94.	118.	139.	151.	143.	132.	115.	93.	70.	60.	104.
NORTH	59.	69.	78.	93.	112.	125.	121.	111.	100.	85.	68.	59.	90.
NORTHEAST	61.	77.	94.	118.	139.	151.	143.	132.	115.	93.	70.	60.	104.
EAST	87.	108.	123.	141.	156.	164.	156.	152.	142.	121.	93.	82.	127.
SOUTHEAST	122.	135.	138.	140.	144.	148.	146.	151.	155.	147.	125.	114.	139.
HORIZ.	118.	148.	178.	208.	235.	245.	224.	215.	196.	160.	122.	106.	180.

LOCATION		ELY, NEVADA		LATITUDE 39 DEGREES 17 MINUTES																		
MONTH	1	HO	1469.	TOD	27.	TOT	23.	KT	HOURLY SOLAR RADIATION								KD		.170			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	0.	0.	74.	148.	194.	222.	231.	222.	194.	148.	74.	0.	0.	0.	0.	1506.	147.	244.	71.	111.
SOUTHWEST	0.	0.	0.	0.	9.	22.	75.	128.	174.	205.	217.	198.	121.	0.	0.	0.	0.	1149.	118.	193.	60.	90.
WEST	0.	0.	0.	0.	9.	19.	28.	34.	35.	48.	129.	144.	103.	0.	0.	0.	0.	589.	74.	112.	42.	57.
NORTHWEST	0.	0.	0.	0.	9.	19.	28.	34.	35.	34.	28.	19.	29.	0.	0.	0.	0.	236.	46.	61.	31.	37.
NORTH	0.	0.	0.	0.	9.	19.	28.	34.	35.	34.	28.	19.	9.	0.	0.	0.	0.	215.	44.	58.	30.	36.
NORTHEAST	0.	0.	0.	0.	29.	19.	28.	34.	35.	34.	28.	19.	9.	0.	0.	0.	0.	236.	46.	61.	31.	37.
EAST	0.	0.	0.	0.	103.	144.	129.	88.	35.	34.	28.	19.	9.	0.	0.	0.	0.	589.	74.	112.	42.	57.
SOUTHEAST	0.	0.	0.	0.	121.	198.	217.	205.	174.	128.	75.	22.	9.	0.	0.	0.	0.	1149.	118.	193.	60.	90.
HORIZ.	0.	0.	0.	0.	29.	79.	121.	147.	157.	147.	121.	79.	29.	0.	0.	0.	0.	909.	99.	158.	52.	76.

MONTH	2	HO	2031.	TOD	32.	TOT	28.	KT	HOURLY SOLAR RADIATION								KD		.159			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	0.	20.	98.	156.	198.	224.	233.	224.	198.	156.	98.	20.	0.	0.	0.	1626.	148.	242.	80.	123.
SOUTHWEST	0.	0.	0.	4.	16.	28.	68.	127.	178.	215.	234.	227.	192.	51.	0.	0.	0.	1330.	127.	204.	71.	106.
WEST	0.	0.	0.	4.	16.	28.	36.	42.	44.	105.	153.	181.	170.	55.	0.	0.	0.	834.	91.	140.	55.	77.
NORTHWEST	0.	0.	0.	4.	16.	28.	36.	42.	44.	42.	36.	45.	67.	29.	0.	0.	0.	389.	60.	82.	41.	51.
NORTH	0.	0.	0.	4.	16.	28.	36.	42.	44.	42.	36.	28.	16.	4.	0.	0.	0.	296.	53.	70.	38.	45.
NORTHEAST	0.	0.	0.	29.	67.	45.	36.	42.	44.	42.	36.	28.	16.	4.	0.	0.	0.	389.	60.	82.	41.	51.
EAST	0.	0.	0.	55.	170.	181.	153.	105.	44.	42.	36.	28.	16.	4.	0.	0.	0.	834.	91.	140.	55.	77.
SOUTHEAST	0.	0.	0.	51.	182.	227.	234.	215.	178.	127.	68.	28.	16.	4.	0.	0.	0.	1330.	127.	204.	71.	106.
HORIZ.	0.	0.	0.	10.	67.	124.	169.	197.	207.	197.	169.	124.	67.	10.	0.	0.	0.	1340.	127.	205.	71.	106.

MONTH	3	HO	2649.	TOD	39.	TOT	35.	KT	HOURLY SOLAR RADIATION								KD		.151			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	0.	35.	91.	143.	183.	208.	217.	208.	183.	143.	91.	35.	0.	0.	0.	1537.	138.	218.	85.	125.
SOUTHWEST	0.	0.	0.	11.	24.	36.	52.	114.	168.	209.	232.	232.	203.	130.	0.	0.	0.	1413.	130.	204.	81.	118.
WEST	0.	0.	0.	11.	24.	36.	44.	50.	52.	117.	172.	206.	211.	156.	0.	0.	0.	1078.	108.	165.	70.	98.
NORTHWEST	0.	0.	0.	11.	24.	36.	44.	50.	52.	50.	44.	81.	108.	96.	0.	0.	0.	597.	78.	109.	54.	70.
NORTH	0.	0.	0.	11.	24.	36.	44.	50.	52.	50.	44.	36.	24.	11.	0.	0.	0.	382.	64.	84.	48.	58.
NORTHEAST	0.	0.	0.	96.	108.	81.	44.	50.	52.	50.	44.	36.	24.	11.	0.	0.	0.	597.	78.	109.	54.	70.
EAST	0.	0.	0.	156.	211.	206.	172.	117.	52.	50.	44.	36.	24.	11.	0.	0.	0.	1078.	108.	165.	70.	98.
SOUTHEAST	0.	0.	0.	130.	203.	232.	232.	209.	168.	114.	52.	36.	24.	11.	0.	0.	0.	1413.	130.	204.	81.	118.
HORIZ.	0.	0.	0.	44.	110.	170.	217.	246.	256.	246.	217.	170.	110.	44.	0.	0.	0.	1832.	157.	252.	94.	142.

LOCATION	ELY, NEVADA	LATITUDE	39 DEGRFS	17 MINUTES
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MONTH	4	HO	3249.	TOD	48.	HOURLY SOLAR RADIATION												KD	.150-	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
						TOT	44.	KT	664	15	16	17	18	19	20	SAT6S	SAT6D				SAT6S	SAT6D		
ORIENTATION	SOUTH	0.	0.	6.	19.	63.	105.	140.	162.	169.	162.	140.	105.	63.	19.	6.	0.	0.	1160.	115.	170.	81.	111.	
	SOUTHWEST	0.	0.	6.	19.	32.	43.	51.	88.	137.	174.	195.	198.	178.	133.	50.	0.	0.	1304.	124.	185.	86.	120.	
	WEST	0.	0.	6.	19.	32.	43.	51.	56.	58.	117.	166.	199.	208.	180.	80.	0.	0.	1216.	118.	176.	83.	115.	
	NORTHWEST	0.	0.	6.	19.	32.	43.	51.	56.	58.	56.	70.	109.	134.	133.	67.	0.	0.	835.	77.	136.	70.	92.	
	NORTH	0.	0.	18.	19.	32.	43.	51.	56.	58.	56.	51.	43.	32.	19.	18.	0.	0.	497.	77.	100.	60.	73.	
	NORTHEAST	0.	0.	67.	133.	134.	109.	70.	56.	58.	56.	51.	43.	32.	19.	6.	0.	0.	835.	97.	136.	70.	92.	
	EAST	0.	0.	80.	180.	208.	199.	166.	117.	58.	56.	51.	43.	32.	19.	6.	0.	0.	1216.	119.	176.	83.	115.	
	SOUTHEAST	0.	0.	50.	133.	178.	198.	195.	174.	137.	88.	51.	43.	32.	19.	6.	0.	0.	1304.	124.	185.	86.	120.	
	HORIZ.	0.	0.	19.	78.	141.	197.	240.	267.	276.	267.	240.	197.	141.	78.	19.	0.	0.	2159.	173.	275.	113.	169.	

MONTH	5	H0	3625.	T00	57.	T0T	52.	KT	.649	KD	.162													
ORIENTATION																								
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAGS		SAG/ALL DAY SATGS	
HOURLY SOLAR RADIATION												SAGS				SATGD				SAGS		SATGD		
SOUTH	0.	1.	12.	24.	42.	79.	110.	130.	136.	130.	110.	79.	42.	24.	1.	0.	933.	110.	151.	84.	108.			
SOUTHWEST	0.	1.	12.	24.	36.	46.	54.	70.	114.	148.	168.	172.	156.	122.	67.	1.	0.	1193.	125.	178.	92.	124.		
WEST	0.	1.	12.	24.	36.	46.	54.	59.	61.	115.	160.	190.	200.	183.	120.	2.	0.	1265.	139.	185.	95.	128.		
NORTHWEST	0.	1.	12.	24.	36.	46.	54.	59.	61.	59.	90.	125.	148.	150.	110.	2.	0.	979.	113.	156.	85.	111.		
NORTH	0.	2.	43.	44.	36.	46.	54.	59.	61.	59.	54.	46.	36.	44.	43.	2.	0.	631.	93.	121.	73.	90.		
NORTHEAST	0.	2.	110.	150.	148.	125.	90.	59.	61.	59.	54.	46.	36.	24.	12.	1.	0.	979.	113.	156.	85.	111.		
EAST	0.	2.	120.	183.	200.	190.	160.	115.	61.	59.	54.	46.	36.	24.	12.	1.	0.	1265.	139.	185.	95.	128.		
SOUTHEAST	0.	1.	67.	122.	156.	172.	168.	148.	114.	70.	54.	46.	36.	24.	12.	1.	0.	1193.	125.	178.	92.	124.		
NORIZ.	0.	2.	41.	100.	158.	210.	250.	275.	283.	275.	250.	210.	158.	100.	41.	2.	0.	2353.	192.	295.	132.	194.		

MONTH	6	H0	3759.	TOD	65.	TOT	60.	KT	KD	.147							
ORIENTATION:																	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SOUTH	0.	3.	13.	25.	37.	73.	105.	126.	133.	126.	105.	73.	37.	25.	13.	3.	0.
SOUTHWEST	0.	3.	13.	25.	37.	47.	55.	63.	112.	150.	173.	179.	164.	130.	75.	8.	0.
WEST	0.	3.	13.	25.	37.	47.	55.	60.	62.	122.	173.	208.	221.	205.	145.	17.	0.
NORTHWEST	0.	3.	13.	25.	37.	47.	55.	60.	62.	60.	103.	143.	170.	175.	138.	18.	0.
NORTH	0.	10.	57.	57.	41.	47.	55.	60.	62.	60.	55.	47.	41.	57.	57.	10.	0.
NORTHEAST	0.	18.	138.	175.	170.	143.	103.	60.	62.	60.	55.	47.	37.	25.	13.	3.	0.
EAST	0.	17.	145.	205.	221.	208.	173.	122.	62.	60.	55.	47.	37.	25.	13.	3.	0.
SOUTHEAST	0.	8.	75.	130.	164.	179.	173.	150.	112.	63.	55.	47.	37.	25.	13.	3.	0.
POURIZ.	0.	5.	52.	116.	179.	234.	277.	304.	313.	304.	277.	234.	179.	116.	52.	5.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SAGS																	
SATGS SATGN SATGS SATGN																	
SAG/ALL DAY SAGS SATGN																	
SATGS SATGN SATGS SATGN																	

LOCATION		ELY, NEVADA		LATITUDE 39 DEGREES 17 MINUTES																				
MONTH	7	HO	3622.	TOT	74.	TOT	68.	KT	.656	KD	.160													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH		0.	1.	12.	24.	41.	79.	110.	130.	137.	130.	110.	79.	41.	24.	12.	1.	0.	932.	128.	169.	100.	125.	143.
SOUTHWEST		0.	1.	12.	24.	36.	46.	54.	69.	115.	149.	170.	173.	157.	122.	66.	2.	0.	1196.	147.	203.	112.	145.	147.
WEST		0.	1.	12.	24.	36.	46.	54.	59.	61.	116.	162.	192.	202.	183.	119.	2.	0.	1270.	143.	195.	109.	141.	143.
NORTHWEST		0.	1.	12.	24.	36.	46.	54.	59.	61.	59.	91.	126.	150.	151.	109.	2.	0.	982.	131.	174.	102.	128.	131.
NORTH		0.	2.	43.	45.	36.	46.	54.	59.	61.	59.	54.	46.	36.	45.	43.	2.	0.	631.	111.	138.	90.	106.	111.
NORTHEAST		0.	2.	109.	151.	150.	126.	91.	59.	61.	59.	54.	46.	36.	24.	12.	1.	0.	982.	131.	174.	102.	128.	131.
EAST		0.	2.	119.	183.	202.	192.	162.	116.	61.	59.	54.	46.	36.	24.	12.	1.	0.	1270.	147.	203.	112.	145.	147.
SOUTHEAST		0.	2.	66.	122.	157.	173.	170.	149.	115.	69.	54.	46.	36.	24.	12.	1.	0.	1196.	143.	195.	109.	141.	143.
HORIZ.		0.	2.	40.	100.	160.	212.	252.	278.	287.	278.	252.	212.	160.	100.	40.	2.	0.	2376.	210.	314.	150.	212.	210.
MONTH 8		HO	3226.	TOT	72.	TOT	66.	KT	.695	KD	.150													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH		0.	0.	6.	19.	64.	109.	145.	169.	177.	169.	145.	109.	64.	19.	6.	0.	0.	1199.	146.	203.	107.	139.	146.
SOUTHWEST		0.	0.	6.	19.	31.	42.	51.	56.	142.	182.	205.	207.	186.	136.	47.	0.	0.	1344.	155.	218.	112.	148.	155.
WEST		0.	0.	6.	19.	31.	42.	51.	56.	58.	121.	174.	209.	218.	186.	76.	0.	0.	1246.	149.	208.	109.	142.	149.
NORTHWEST		0.	0.	6.	19.	31.	42.	51.	56.	58.	56.	71.	113.	140.	137.	64.	0.	0.	843.	124.	164.	95.	117.	124.
NORTH		0.	0.	18.	19.	31.	42.	51.	56.	58.	56.	51.	42.	31.	19.	18.	0.	0.	490.	102.	126.	83.	96.	102.
NORTHEAST		0.	0.	64.	137.	140.	113.	71.	56.	58.	56.	51.	42.	31.	19.	6.	0.	0.	843.	124.	164.	95.	117.	124.
EAST		0.	0.	76.	186.	218.	209.	174.	121.	58.	56.	51.	42.	31.	19.	6.	0.	0.	1246.	149.	208.	109.	142.	149.
SOUTHEAST		0.	0.	47.	136.	186.	207.	205.	182.	142.	89.	51.	42.	31.	19.	6.	0.	0.	1344.	155.	218.	112.	148.	155.
HORIZ.		0.	0.	18.	79.	146.	204.	250.	279.	289.	279.	250.	204.	146.	79.	18.	0.	0.	2243.	210.	316.	143.	202.	210.
MONTH 9		HO	2636.	TOT	64.	TOT	58.	KT	.696	KD	.150													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH		0.	0.	0.	33.	89.	141.	182.	208.	217.	208.	182.	141.	89.	33.	0.	0.	0.	1524.	167.	247.	110.	150.	167.
SOUTHWEST		0.	0.	0.	11.	24.	35.	51.	114.	168.	210.	232.	231.	200.	123.	0.	0.	0.	1399.	159.	232.	106.	142.	159.
WEST		0.	0.	0.	11.	24.	35.	44.	50.	52.	118.	172.	206.	207.	147.	0.	0.	0.	1066.	136.	192.	94.	122.	136.
NORTHWEST		0.	0.	0.	11.	24.	35.	44.	50.	52.	50.	44.	81.	107.	92.	0.	0.	0.	590.	104.	135.	78.	93.	104.
NORTH		0.	0.	0.	11.	24.	35.	44.	50.	52.	50.	44.	35.	24.	11.	0.	0.	0.	380.	90.	109.	71.	81.	90.
NORTHEAST		0.	0.	0.	92.	107.	81.	44.	50.	52.	50.	44.	35.	24.	11.	0.	0.	0.	590.	104.	135.	78.	93.	104.
EAST		0.	0.	0.	147.	207.	206.	172.	118.	52.	50.	44.	35.	24.	11.	0.	0.	0.	1066.	136.	192.	94.	122.	136.
SOUTHEAST		0.	0.	0.	123.	200.	231.	232.	210.	168.	114.	51.	35.	24.	11.	0.	0.	0.	1399.	159.	232.	106.	142.	159.
HORIZ.		0.	0.	0.	43.	109.	170.	218.	248.	258.	248.	218.	170.	109.	43.	0.	0.	0.	1834.	188.	284.	121.	169.	188.



LOCATION		ELY, NEVADA		LATITUDE		39 DEGREES		17 MINUTES			
MONTH	10	HO	1997.	TOD	52.	TOT	47.	KT	691	KD	.151
ORIENTATION											
4	5	6	7	8	9	10	11	12	13	14	15
HOURLY SOLAR RADIATION											
SOUTH	0.	0.	17.	101.	164.	210.	239.	249.	239.	210.	164.
SOUTHWEST	0.	0.	4.	16.	27.	71.	133.	189.	229.	248.	239.
WEST	0.	0.	4.	16.	27.	36.	41.	43.	109.	161.	190.
NORTHWEST	0.	0.	4.	16.	27.	36.	41.	43.	41.	36.	45.
NORTH	0.	0.	4.	16.	27.	36.	41.	43.	41.	36.	27.
NORTHEAST	0.	0.	24.	68.	45.	36.	41.	43.	41.	36.	27.
EAST	0.	0.	46.	174.	190.	161.	109.	43.	41.	36.	27.
SOUTHEAST	0.	0.	43.	188.	239.	248.	229.	189.	133.	71.	27.
HORIZ.	0.	0.	9.	67.	127.	175.	205.	215.	205.	175.	127.
DAILY TOTAL RADIATION											
	1711.	1385.	846.	380.	289.	73.	90.	56.	64.	59.	69.
	174.	151.	112.	79.	79.	79.	101.	74.	96.	128.	91.
	174.	274.	102.	147.	127.	231.	231.	91.	127.	91.	127.

MONTH 11		HO 1457.		TOD 40.		TOT 35.		KT .658		KD .160											
ORIENTATION												DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY							
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SAT6S	SAT6D	SAT6S	SAT6D	
HOURLY SOLAR RADIATION																					
SOUTH	0.	0.	0.	78.	160.	212.	243.	253.	243.	212.	160.	78.	0.	0.	0.	0.	170.	276.	88.	131.	
SOUTHWEST	0.	0.	0.	8.	22.	80.	139.	189.	225.	237.	216.	129.	0.	0.	0.	0.	139.	219.	75.	108.	
WEST	0.	0.	0.	8.	19.	28.	33.	35.	94.	139.	156.	109.	0.	0.	0.	0.	89.	130.	55.	71.	
NORTHWEST	0.	0.	0.	8.	19.	28.	33.	35.	33.	28.	19.	30.	0.	0.	0.	0.	58.	74.	43.	49.	
NORTH	0.	0.	0.	8.	19.	28.	33.	35.	33.	28.	19.	8.	0.	0.	0.	0.	57.	70.	42.	48.	
NORTHEAST	0.	0.	0.	30.	19.	28.	33.	35.	33.	28.	19.	8.	0.	0.	0.	0.	58.	74.	43.	49.	
EAST	0.	0.	0.	109.	156.	139.	94.	35.	33.	28.	19.	8.	0.	0.	0.	0.	89.	130.	55.	71.	
SOUTHEAST	0.	0.	0.	129.	216.	237.	225.	189.	139.	80.	22.	8.	0.	0.	0.	0.	139.	219.	75.	108.	
HORIZ.	0.	0.	0.	29.	83.	128.	157.	167.	157.	128.	83.	29.	0.	0.	0.	0.	116.	178.	66.	91.	

ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION			SAG/DAYTIME			SAG/ALL DAY		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	56.	152.	208.	239.	249.	239.	208.	152.	56.	0.	0.	0.	0.	161.	267.	77.	118.
SOUTHWEST	0.	0.	0.	0.	5.	25.	81.	137.	186.	218.	227.	190.	88.	0.	0.	0.	0.	129.	208.	64.	95.
WEST	0.	0.	0.	0.	5.	16.	25.	30.	32.	87.	128.	130.	72.	0.	0.	0.	0.	76.	112.	44.	58.
NORTHWEST	0.	0.	0.	0.	5.	16.	25.	30.	32.	30.	25.	16.	17.	0.	0.	0.	0.	47.	61.	33.	38.
NORTH	0.	0.	0.	0.	5.	16.	25.	30.	32.	30.	25.	16.	5.	0.	0.	0.	0.	46.	59.	33.	38.
NORTHEAST	0.	0.	0.	0.	17.	16.	25.	30.	32.	30.	25.	16.	5.	0.	0.	0.	0.	47.	61.	33.	38.
EAST	0.	0.	0.	0.	72.	139.	128.	87.	32.	30.	25.	16.	5.	0.	0.	0.	0.	76.	112.	44.	58.
SOUTHEAST	0.	0.	0.	0.	88.	199.	227.	218.	186.	137.	81.	25.	5.	0.	0.	0.	0.	129.	208.	64.	95.
HORIZ.	0.	0.	0.	0.	16.	66.	109.	137.	146.	137.	109.	66.	16.	0.	0.	0.	0.	161.	267.	77.	118.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	147.	148.	138.	115.	110.	115.	128.	146.	167.	174.	170.	161.	143.
SOUTHWEST	118.	127.	130.	124.	125.	134.	143.	155.	159.	151.	139.	129.	136.
WEST	74.	91.	108.	119.	129.	143.	147.	149.	136.	112.	89.	76.	115.
NORTHWEST	46.	60.	78.	97.	113.	127.	131.	124.	104.	79.	58.	47.	89.
NORTH	44.	53.	64.	77.	93.	105.	111.	102.	90.	73.	57.	46.	76.
NORTHEAST	46.	60.	78.	97.	113.	127.	131.	124.	104.	79.	58.	47.	89.
EAST	74.	91.	108.	119.	129.	143.	147.	149.	136.	112.	89.	76.	115.
SOUTHEAST	118.	127.	130.	124.	125.	134.	143.	155.	159.	151.	139.	129.	136.
HORIZ.	99.	127.	157.	173.	192.	212.	210.	210.	188.	150.	116.	98.	161.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	244.	242.	218.	170.	151.	153.	169.	203.	247.	274.	276.	267.	218.
SOUTHWEST	193.	204.	204.	185.	178.	187.	195.	218.	232.	231.	219.	204.	204.
WEST	112.	140.	165.	176.	145.	202.	203.	204.	192.	162.	130.	112.	165.
NORTHWEST	61.	82.	109.	136.	156.	174.	174.	164.	135.	101.	74.	61.	119.
NORTH	58.	70.	84.	100.	121.	136.	138.	126.	109.	90.	70.	59.	97.
NORTHEAST	61.	82.	109.	136.	156.	174.	174.	164.	135.	101.	74.	61.	119.
EAST	112.	140.	165.	176.	185.	202.	203.	208.	192.	162.	130.	112.	165.
SOUTHEAST	193.	204.	204.	185.	178.	187.	195.	218.	232.	231.	219.	208.	204.
HORIZ.	158.	205.	252.	275.	295.	325.	314.	316.	284.	231.	178.	153.	249.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	71.	80.	85.	81.	84.	90.	100.	107.	110.	102.	88.	77.	90.
SOUTHWEST	60.	71.	81.	86.	92.	102.	109.	112.	106.	91.	75.	64.	87.
WEST	42.	55.	70.	83.	95.	107.	112.	100.	94.	74.	55.	44.	78.
NORTHWEST	31.	41.	54.	70.	85.	97.	102.	95.	78.	59.	43.	33.	66.
NORTH	30.	38.	48.	60.	73.	84.	90.	83.	71.	56.	42.	33.	59.
NORTHEAST	31.	41.	54.	70.	85.	97.	102.	95.	78.	59.	43.	33.	66.
EAST	42.	55.	70.	83.	95.	107.	112.	109.	94.	74.	55.	44.	78.
SOUTHEAST	60.	71.	81.	86.	92.	102.	109.	112.	106.	91.	75.	64.	87.
HORIZ.	52.	71.	94.	113.	132.	150.	150.	143.	121.	91.	66.	53.	103.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	111.	123.	125.	111.	108.	114.	125.	139.	150.	147.	131.	118.	125.
SOUTHWEST	90.	106.	118.	120.	124.	134.	141.	148.	142.	128.	108.	95.	121.
WEST	57.	77.	98.	115.	128.	144.	145.	142.	122.	96.	71.	58.	104.
NORTHWEST	37.	51.	70.	92.	111.	127.	128.	117.	93.	69.	49.	38.	82.
NORTH	36.	45.	58.	73.	90.	103.	106.	96.	81.	64.	48.	38.	70.
NORTHEAST	37.	51.	70.	92.	111.	127.	128.	117.	93.	69.	49.	38.	82.
EAST	57.	77.	98.	115.	128.	144.	145.	142.	122.	96.	71.	58.	104.
SOUTHEAST	90.	106.	118.	120.	124.	134.	141.	148.	142.	128.	108.	95.	121.
HORIZ.	76.	106.	142.	169.	194.	219.	212.	202.	169.	127.	91.	74.	148.

LOCATION	FAIRBANKS, ALASKA										LATITUDE 64 DEGREES 48 MINUTES											
MONTH 1	H0	149.	T00	-7.	TOT	-10.	KT	.639	KD	.164												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGN	SAG/ALL DAY SATGS SATGN		
SOUTH	0.	0.	0.	0.	0.	0.	36.	237.	317.	237.	36.	0.	0.	0.	0.	0.	0.	864.	118.	220.	18.	41.
SOUTHWEST	0.	0.	0.	0.	0.	0.	13.	128.	227.	211.	39.	0.	0.	0.	0.	0.	0.	617.	82.	155.	10.	26.
WEST	0.	0.	0.	0.	0.	0.	2.	5.	7.	64.	20.	0.	0.	0.	0.	0.	0.	98.	7.	19.	-7.	-4.
NORTHWEST	0.	0.	0.	0.	0.	0.	2.	5.	7.	5.	2.	0.	0.	0.	0.	0.	0.	22.	-4.	-1.	-9.	-9.
NORTH	0.	0.	0.	0.	0.	0.	2.	5.	7.	5.	2.	0.	0.	0.	0.	0.	0.	22.	-4.	-1.	-9.	-9.
NORTHEAST	0.	0.	0.	0.	0.	0.	2.	5.	7.	5.	2.	0.	0.	0.	0.	0.	0.	22.	-4.	-1.	-9.	-9.
EAST	0.	0.	0.	0.	0.	0.	20.	64.	7.	5.	2.	0.	0.	0.	0.	0.	0.	98.	7.	19.	-7.	-4.
SOUTHEAST	0.	0.	0.	0.	0.	0.	39.	211.	227.	128.	13.	0.	0.	0.	0.	0.	0.	617.	82.	155.	10.	26.
HORIZ.	0.	0.	0.	0.	0.	0.	4.	25.	36.	25.	4.	0.	0.	0.	0.	0.	0.	95.	7.	18.	-7.	-4.
MONTH 2	H0	665.	T00	0.	TOT	-3.	KT	.556	KD	.180												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGN	SAG/ALL DAY SATGS SATGN		
SOUTH	0.	0.	0.	0.	10.	93.	161.	202.	216.	202.	161.	93.	10.	0.	0.	0.	0.	1149.	100.	181.	34.	64.
SOUTHWEST	0.	0.	0.	0.	2.	9.	57.	112.	158.	183.	179.	128.	16.	0.	0.	0.	0.	845.	73.	133.	24.	46.
WEST	0.	0.	0.	0.	2.	8.	13.	16.	18.	67.	99.	92.	15.	0.	0.	0.	0.	330.	29.	52.	7.	16.
NORTHWEST	0.	0.	0.	0.	2.	8.	13.	16.	18.	16.	13.	8.	6.	0.	0.	0.	0.	101.	9.	16.	0.	3.
NORTH	0.	0.	0.	0.	2.	8.	13.	16.	18.	16.	13.	8.	2.	0.	0.	0.	0.	97.	9.	16.	0.	3.
NORTHEAST	0.	0.	0.	0.	6.	8.	13.	16.	18.	16.	13.	8.	2.	0.	0.	0.	0.	101.	9.	16.	0.	3.
EAST	0.	0.	0.	0.	15.	92.	99.	67.	18.	16.	13.	8.	2.	0.	0.	0.	0.	330.	29.	52.	7.	16.
SOUTHEAST	0.	0.	0.	0.	16.	128.	179.	183.	158.	112.	57.	9.	2.	0.	0.	0.	0.	845.	73.	133.	24.	46.
HORIZ.	0.	0.	0.	0.	4.	27.	51.	67.	73.	67.	51.	27.	4.	0.	0.	0.	0.	370.	32.	58.	9.	18.
MONTH 3	H0	1474.	T00	13.	TOT	9.	KT	.674	KD	.156												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGN	SAG/ALL DAY SATGS SATGN		
SOUTH	0.	0.	0.	29.	97.	166.	221.	257.	269.	257.	221.	166.	97.	29.	0.	0.	0.	1808.	128.	222.	67.	114.
SOUTHWEST	0.	0.	0.	6.	13.	20.	75.	142.	199.	238.	252.	238.	187.	89.	0.	0.	0.	1458.	106.	182.	56.	94.
WEST	0.	0.	0.	6.	13.	20.	25.	28.	29.	96.	150.	182.	175.	101.	0.	0.	0.	826.	66.	108.	35.	57.
NORTHWEST	0.	0.	0.	6.	13.	20.	25.	28.	29.	28.	25.	31.	68.	57.	0.	0.	0.	331.	34.	51.	20.	28.
NORTH	0.	0.	0.	6.	13.	20.	25.	28.	29.	28.	25.	20.	13.	6.	0.	0.	0.	213.	27.	38.	16.	21.
NORTHEAST	0.	0.	0.	57.	68.	31.	25.	28.	29.	28.	25.	20.	13.	6.	0.	0.	0.	331.	34.	51.	20.	28.
EAST	0.	0.	0.	101.	175.	182.	150.	96.	29.	28.	25.	20.	13.	6.	0.	0.	0.	826.	66.	108.	35.	57.
SOUTHEAST	0.	0.	0.	-89.	187.	238.	252.	238.	199.	142.	75.	20.	13.	6.	0.	0.	0.	1458.	106.	182.	56.	94.
HORIZ.	0.	0.	0.	19.	56.	91.	120.	138.	144.	138.	120.	91.	56.	19.	0.	0.	0.	993.	76.	128.	41.	67.

LOCATION	FAIRBANKS, ALASKA	LATITUDE	64 DEGRFES	48 MINUTES
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MONTH	4	H0	2512.	T00	32.	T0T	29.	HOURLY SOLAR RADIATION											KD	.162	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
								7	8	9	10	11	12	13	14	15	16	17				18	19	20	SAT6S
ORIENTATION	SOUTH	0.	4.	10.	43.	98.	151.	195.	223.	232.	223.	195.	151.	98.	43.	10.	4.	0.	1679.	115.	183.	83.	127.		
	SOUTHWEST	0.	4.	10.	18.	25.	31.	57.	126.	176.	212.	229.	226.	200.	153.	88.	19.	0.	1584.	111.	175.	80.	121.		
	WEST	0.	4.	10.	18.	25.	31.	36.	39.	40.	100.	150.	186.	199.	184.	132.	35.	0.	1190.	91.	139.	67.	98.		
	NORTHWEST	0.	4.	10.	18.	25.	31.	36.	39.	40.	39.	36.	56.	97.	118.	104.	34.	0.	686.	66.	94.	51.	69.		
	NORTH	0.	14.	21.	18.	25.	31.	36.	39.	40.	39.	36.	31.	25.	18.	21.	14.	0.	409.	52.	69.	42.	53.		
	NORTHEAST	0.	34.	104.	118.	97.	56.	36.	39.	40.	39.	36.	31.	25.	18.	10.	4.	0.	686.	66.	94.	51.	69.		
	EAST	0.	35.	132.	184.	199.	186.	150.	100.	40.	39.	36.	31.	25.	18.	10.	4.	0.	1190.	91.	139.	67.	98.		
	SOUTHEAST	0.	19.	88.	153.	200.	226.	229.	212.	176.	126.	67.	31.	25.	18.	10.	4.	0.	1584.	111.	175.	80.	121.		
	HORIZ.	0.	8.	36.	73.	109.	142.	167.	183.	188.	183.	167.	142.	109.	73.	36.	8.	0.	1625.	113.	178.	81.	124.		

[illegible]

MONTH	6	H0	3721.	T00	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS		
ORIENTATION																						
SOUTH	9.	15.	22.	35.	73.	108.	136.	154.	160.	154.	136.	108.	73.	35.	22.	15.	9.	1271.	112.	150.	103.	136.
SOUTHWEST	9.	15.	22.	28.	35.	40.	55.	94.	127.	151.	163.	162.	148.	122.	88.	51.	18.	1340.	115.	155.	105.	140.
WEST	9.	15.	22.	28.	35.	40.	45.	47.	48.	47.	121.	145.	157.	155.	137.	104.	60.	1278.	112.	151.	103.	137.
NORTHWEST	9.	15.	22.	28.	35.	40.	45.	47.	48.	47.	45.	67.	95.	113.	118.	106.	72.	981.	101.	130.	93.	119.
NORTH	46.	54.	43.	28.	35.	40.	45.	47.	48.	47.	45.	40.	35.	28.	43.	54.	46.	764.	92.	115.	85.	105.
NORTHEAST	72.	106.	118.	113.	95.	67.	45.	47.	48.	47.	45.	40.	35.	28.	22.	15.	9.	981.	101.	130.	93.	119.
EAST	60.	104.	137.	155.	157.	145.	121.	87.	48.	47.	45.	40.	35.	28.	22.	15.	9.	1278.	112.	151.	103.	137.
SOUTHEAST	18.	51.	88.	122.	148.	162.	163.	151.	127.	94.	55.	40.	35.	28.	22.	15.	9.	1340.	115.	155.	105.	140.
HORIZ.	24.	47.	74.	102.	129.	153.	171.	182.	186.	182.	171.	153.	129.	102.	74.	47.	24.	1969.	139.	199.	127.	178.



LOCATION		FAIRBANKS, ALASKA		LATITUDE		64 DEGREES		48 MINUTES															
MONTH	7	HO	3367.	TON	64.	TOT	61.	KT	.4A5	KD	.1A7												
ORIENTATION		HOURLY SOLAR RADIATION																					
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH		6.	12.	18.	34.	68.	100.	125.	142.	147.	142.	125.	100.	68.	34.	18.	12.	6.	115A.	114.	152.	101.	131.
SOUTHWEST		6.	12.	18.	25.	32.	37.	53.	88.	117.	138.	148.	146.	132.	108.	75.	40.	12.	1191.	115.	155.	102.	133.
WEST		6.	12.	18.	25.	32.	37.	41.	44.	45.	79.	108.	129.	138.	133.	114.	79.	33.	1077.	110.	146.	98.	126.
NORTHWEST		6.	12.	18.	25.	32.	37.	41.	44.	45.	44.	41.	58.	81.	96.	96.	78.	38.	797.	98.	125.	88.	109.
NORTH		25.	39.	34.	25.	32.	37.	41.	44.	45.	44.	41.	37.	32.	25.	34.	39.	25.	602.	90.	110.	81.	97.
NORTHEAST		38.	78.	96.	96.	81.	58.	41.	44.	45.	44.	41.	37.	32.	25.	18.	12.	6.	797.	98.	125.	88.	109.
EAST		33.	79.	114.	133.	138.	129.	108.	79.	45.	44.	41.	37.	32.	25.	18.	12.	6.	1077.	110.	146.	98.	126.
SOUTHEAST		12.	40.	75.	108.	132.	146.	148.	138.	117.	98.	53.	37.	32.	25.	18.	12.	6.	1191.	115.	155.	102.	133.
HORIZ.		13.	33.	57.	84.	109.	131.	148.	158.	162.	158.	148.	131.	109.	84.	57.	33.	13.	1633.	134.	189.	117.	160.
														DAILY TOTAL RADIATION				SAG/DAYTIME SATGS		SAG/ALL DAY SATGS			

MONTH	8	HO	2500.	TOD	58.	TOT	56.	KT	.463	KD	.186							
HOURLY SOLAR RADIATION																		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SOUTH	0.	4.	10.	31.	65.	98.	124.	141.	147.	141.	124.	98.	65.	31.	10.	4.	0.	
SOUTHWEST	0.	4.	10.	17.	24.	29.	52.	86.	115.	135.	144.	140.	122.	92.	52.	11.	0.	
WEST	0.	4.	10.	17.	24.	29.	34.	37.	38.	71.	99.	117.	122.	109.	75.	19.	0.	
NORTHWEST	0.	4.	10.	17.	24.	29.	34.	37.	38.	37.	34.	43.	64.	73.	60.	19.	0.	
NORTH	0.	9.	16.	17.	24.	29.	34.	37.	38.	37.	34.	29.	24.	17.	16.	9.	0.	
NORTHEAST	0.	19.	60.	73.	64.	43.	34.	37.	38.	37.	34.	29.	24.	17.	10.	4.	0.	
EAST	0.	19.	75.	109.	122.	117.	99.	71.	38.	37.	34.	29.	24.	17.	10.	4.	0.	
SOUTHEAST	0.	11.	52.	92.	122.	140.	144.	135.	115.	86.	52.	29.	24.	17.	10.	4.	0.	
HORIZ.	0.	8.	28.	53.	78.	100.	118.	128.	132.	128.	118.	100.	78.	53.	28.	8.	0.	
DAILY TOTAL												1094.	SAG/DAYTIME		116.	160.	93.	122.
RADIATION												1035.	SATGS		113.	154.	91.	118.
												807.	SAG/ALL DAY		101.	133.	83.	104.
												523.	SATGS		86.	107.	73.	87.
												371.	SATGS		78.	93.	68.	78.
												523.	SATGS		86.	107.	73.	87.
												807.	SATGS		101.	133.	83.	104.
												1035.	SATGS		113.	154.	91.	118.
												1157.	SATGS		119.	166.	95.	126.

MONTH		9	HO	1481.	TOO	47.	TOT	45.	KT	.419	KD	.1A4						
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		HOURLY SOLAR RADIATION																
SOUTH	0.	0.	0.	0.	16.	49.	83.	111.	129.	135.	129.	111.	83.	49.	16.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	6.	13.	18.	45.	77.	103.	120.	125.	116.	89.	41.	0.	0.	0.
WEST	0.	0.	0.	0.	6.	13.	18.	23.	25.	26.	56.	79.	91.	83.	46.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	6.	13.	18.	23.	25.	26.	25.	23.	23.	37.	28.	0.	0.	0.
NORTH	0.	0.	0.	0.	6.	13.	18.	23.	25.	26.	25.	23.	18.	13.	6.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	28.	37.	23.	23.	25.	26.	25.	23.	18.	13.	6.	0.	0.	0.
EAST	0.	0.	0.	0.	46.	83.	91.	79.	56.	26.	25.	23.	18.	13.	6.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	41.	89.	116.	125.	120.	103.	77.	45.	18.	13.	6.	0.	0.	0.
HORIZ.	0.	0.	0.	1.	15.	36.	57.	74.	84.	88.	84.	74.	57.	36.	15.	1.	0.	0.
DAILY TOTAL		RADIATION																
SAG/DAYTIME		SATGS																
SAG/ALL DAY		SATGS																

LOCATION		FAIRBANKS, ALASKA		LATITUDE 64 DEGREES		48 MINUTES																	
MONTH	10	HO	639.	TOD	30.	TOT	27.	KT	.416	KD	.184												
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH	0.	0.	0.	0.	0.	4.	56.	102.	130.	140.	130.	102.	56.	4.	0.	0.	0.	0.	723.	93.	144.	51.	70.
SOUTHWEST	0.	0.	0.	0.	0.	2.	8.	38.	74.	103.	118.	112.	75.	6.	0.	0.	0.	0.	538.	77.	115.	45.	59.
WEST	0.	0.	0.	0.	0.	2.	7.	12.	14.	15.	46.	64.	55.	6.	0.	0.	0.	0.	221.	49.	65.	35.	40.
NORTHWEST	0.	0.	0.	0.	0.	2.	7.	12.	14.	15.	14.	12.	7.	3.	0.	0.	0.	0.	87.	37.	43.	30.	33.
NORTH	0.	0.	0.	0.	0.	2.	7.	12.	14.	15.	14.	12.	7.	2.	0.	0.	0.	0.	86.	37.	43.	30.	32.
NORTHEAST	0.	0.	0.	0.	0.	3.	7.	12.	14.	15.	14.	12.	7.	2.	0.	0.	0.	0.	87.	37.	43.	30.	33.
EAST	0.	0.	0.	0.	0.	6.	55.	64.	46.	15.	14.	12.	7.	2.	0.	0.	0.	0.	221.	49.	65.	35.	40.
SOUTHEAST	0.	0.	0.	0.	0.	6.	75.	112.	118.	103.	74.	38.	8.	2.	0.	0.	0.	0.	538.	77.	115.	45.	59.
HORIZ.	0.	0.	0.	0.	0.	3.	19.	36.	48.	52.	48.	36.	19.	3.	0.	0.	0.	0.	266.	53.	72.	36.	43.

MONTH	11	HO	143.	TOD	5.	TOT	3.	KT	.470	KD	.186												
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH	0.	0.	0.	0.	0.	0.	0.	18.	142.	104.	142.	18.	0.	0.	0.	0.	0.	0.	513.	81.	142.	20.	33.
SOUTHWEST	0.	0.	0.	0.	0.	0.	0.	7.	77.	139.	126.	19.	0.	0.	0.	0.	0.	0.	369.	60.	104.	15.	25.
WEST	0.	0.	0.	0.	0.	0.	0.	2.	5.	6.	39.	10.	0.	0.	0.	0.	0.	0.	63.	15.	22.	5.	7.
NORTHWEST	0.	0.	0.	0.	0.	0.	0.	2.	5.	6.	5.	2.	0.	0.	0.	0.	0.	0.	20.	8.	11.	4.	4.
NORTH	0.	0.	0.	0.	0.	0.	0.	2.	5.	6.	5.	2.	0.	0.	0.	0.	0.	0.	20.	8.	11.	4.	4.
NORTHEAST	0.	0.	0.	0.	0.	0.	0.	2.	5.	6.	5.	2.	0.	0.	0.	0.	0.	0.	20.	8.	11.	4.	4.
EAST	0.	0.	0.	0.	0.	0.	0.	10.	39.	6.	5.	2.	0.	0.	0.	0.	0.	0.	63.	15.	22.	5.	7.
SOUTHEAST	0.	0.	0.	0.	0.	0.	0.	19.	126.	139.	77.	7.	0.	0.	0.	0.	0.	0.	369.	60.	104.	15.	25.
HORIZ.	0.	0.	0.	0.	0.	0.	0.	4.	17.	25.	17.	4.	0.	0.	0.	0.	0.	0.	67.	15.	23.	5.	7.

MONTH	12	HO	28.	TOD	-7.	TOT	-9.	KT	.458	KD	.186												
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH	0.	0.	0.	0.	0.	0.	0.	0.	7.	250.	7.	0.	0.	0.	0.	0.	0.	0.	263.	60.	115.	-1.	6.
SOUTHWEST	0.	0.	0.	0.	0.	0.	0.	0.	4.	177.	6.	0.	0.	0.	0.	0.	0.	0.	187.	41.	80.	-3.	2.
WEST	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	2.	0.	0.	0.	0.	0.	0.	0.	6.	-5.	-4.	-9.	-9.
NORTHWEST	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	1.	0.	0.	0.	0.	0.	0.	0.	4.	-6.	-5.	-9.	-9.
NORTH	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	1.	0.	0.	0.	0.	0.	0.	0.	4.	-6.	-5.	-9.	-9.
NORTHEAST	0.	0.	0.	0.	0.	0.	0.	0.	1.	2.	1.	0.	0.	0.	0.	0.	0.	0.	4.	-6.	-5.	-9.	-9.
EAST	0.	0.	0.	0.	0.	0.	0.	0.	2.	2.	1.	0.	0.	0.	0.	0.	0.	0.	6.	-5.	-4.	-9.	-9.
SOUTHEAST	0.	0.	0.	0.	0.	0.	0.	0.	6.	177.	4.	0.	0.	0.	0.	0.	0.	0.	187.	41.	80.	-3.	2.
SORIZ.	0.	0.	0.	0.	0.	0.	0.	0.	2.	10.	2.	0.	0.	0.	0.	0.	0.	0.	13.	-3.	-1.	-9.	-8.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	118.	100.	128.	115.	108.	112.	114.	116.	109.	93.	81.	60.	104.
SOUTHWEST	82.	73.	106.	111.	110.	115.	115.	113.	98.	77.	60.	41.	92.
WEST	7.	29.	66.	91.	104.	112.	110.	101.	79.	49.	15.	-5.	63.
NORTHWEST	-4.	9.	34.	66.	79.	101.	98.	86.	64.	37.	8.	-6.	44.
NORTH	-4.	9.	27.	52.	78.	92.	90.	78.	60.	37.	8.	-6.	49.
NORTHEAST	-4.	9.	34.	66.	89.	101.	98.	86.	64.	37.	8.	-6.	49.
EAST	7.	29.	66.	91.	104.	112.	110.	101.	79.	49.	15.	-5.	63.
SOUTHEAST	82.	73.	106.	111.	110.	115.	115.	113.	98.	77.	60.	41.	92.
HORIZ.	7.	32.	76.	113.	130.	139.	134.	119.	89.	53.	15.	-3.	75.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	220.	181.	222.	183.	152.	150.	152.	160.	156.	144.	142.	115.	165.
SOUTHWEST	155.	133.	182.	175.	155.	155.	155.	154.	137.	115.	104.	80.	142.
WEST	19.	52.	108.	139.	145.	151.	146.	133.	103.	65.	22.	-4.	90.
NORTHWEST	-1.	16.	51.	94.	118.	130.	125.	107.	77.	43.	11.	-5.	64.
NORTH	-1.	16.	38.	69.	100.	115.	110.	93.	71.	43.	11.	-5.	55.
NORTHEAST	-1.	16.	51.	94.	118.	130.	125.	107.	77.	43.	11.	-5.	64.
EAST	19.	52.	108.	139.	145.	151.	146.	133.	103.	65.	22.	-4.	90.
SOUTHEAST	155.	133.	182.	175.	155.	155.	155.	154.	137.	115.	104.	80.	142.
HORIZ.	18.	58.	128.	178.	191.	199.	189.	166.	121.	72.	23.	-1.	112.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	18.	34.	67.	83.	93.	103.	101.	93.	76.	51.	20.	-1.	61.
SOUTHWEST	10.	24.	56.	80.	94.	105.	102.	91.	70.	45.	15.	-3.	57.
WEST	-7.	7.	35.	67.	89.	103.	98.	83.	61.	35.	5.	-9.	47.
NORTHWEST	-9.	0.	20.	51.	78.	93.	88.	73.	53.	30.	4.	-8.	39.
NORTH	-9.	0.	16.	42.	69.	85.	81.	68.	51.	30.	4.	-9.	36.
NORTHEAST	-9.	0.	20.	51.	78.	93.	88.	73.	53.	30.	4.	-9.	39.
EAST	-7.	7.	35.	67.	89.	103.	98.	83.	61.	35.	5.	-9.	47.
SOUTHEAST	10.	24.	56.	80.	94.	105.	102.	91.	70.	45.	15.	-3.	57.
HORIZ.	-7.	9.	41.	81.	110.	127.	117.	95.	66.	36.	5.	-9.	56.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	41.	64.	114.	127.	127.	136.	131.	122.	100.	70.	33.	6.	89.
SOUTHWEST	26.	46.	94.	121.	130.	140.	133.	118.	90.	59.	25.	2.	82.
WEST	-4.	16.	57.	98.	121.	137.	126.	104.	73.	40.	7.	-8.	64.
NORTHWEST	-9.	3.	28.	69.	101.	119.	109.	87.	60.	33.	4.	-8.	50.
NORTH	-9.	3.	21.	53.	86.	105.	97.	78.	57.	32.	4.	-8.	43.
NORTHEAST	-9.	3.	28.	69.	101.	119.	109.	87.	60.	33.	4.	-8.	50.
EAST	-4.	16.	57.	98.	121.	137.	126.	104.	73.	40.	7.	-8.	64.
SOUTHEAST	26.	46.	94.	121.	130.	140.	133.	118.	90.	59.	25.	2.	82.
HORIZ.	-4.	18.	67.	124.	158.	178.	160.	126.	82.	43.	7.	-8.	79.

LOCATION FORT WORTH, TEXAS LATITUDE 32 DEGREES 50 MINUTES

MONTH	1	HO	1818.	TOD	48.	TOT	45.	HOURLY SOLAR RADIATION								KT	.530	KD	.184				DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20											
SOUTH	0.	0.	0.	1.	73.	121.	153.	173.	179.	173.	153.	121.	73.	1.	0.	0.	0.	1223.	140.	216.	84.	116.						
SOUTHWEST	0.	0.	0.	1.	13.	24.	63.	104.	139.	163.	173.	164.	120.	1.	0.	0.	0.	966.	121.	180.	76.	101.						
WEST	0.	0.	0.	1.	13.	24.	33.	39.	41.	41.	111.	124.	104.	1.	0.	0.	0.	573.	91.	127.	64.	79.						
NORTHWEST	0.	0.	0.	1.	13.	24.	33.	39.	41.	39.	33.	26.	35.	1.	0.	0.	0.	287.	70.	87.	54.	62.						
NORTH	0.	0.	0.	1.	13.	24.	33.	39.	41.	39.	33.	24.	13.	1.	0.	0.	0.	263.	68.	84.	54.	61.						
NORTHEAST	0.	0.	0.	1.	35.	26.	33.	39.	41.	39.	33.	24.	13.	1.	0.	0.	0.	287.	70.	87.	54.	62.						
EAST	0.	0.	0.	1.	104.	124.	111.	81.	41.	39.	33.	24.	13.	1.	0.	0.	0.	573.	91.	127.	64.	79.						
SOUTHEAST	0.	0.	0.	1.	120.	164.	173.	163.	139.	104.	63.	24.	13.	1.	0.	0.	0.	966.	121.	180.	76.	101.						
HORIZ.	0.	0.	0.	2.	41.	88.	125.	148.	156.	148.	125.	88.	41.	2.	0.	0.	0.	962.	121.	180.	76.	101.						

MONTH	2	HO	2335.	TOD	52.	TOT	49.	KT	.541	KD	.182											
ORIENTATION	4	5	6	7	8	9	HOURLY SOLAR RADIATION							DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY					
							11	12	13	14	15	16	17		18	19	20	SAT6S	SAT6D	SAT6S	SAT6D	
SOUTH	0.	0.	0.	24.	77.	116.	145.	163.	170.	163.	145.	116.	77.	24.	0.	0.	0.	1222.	137.	206.	89.	121.
SOUTHWEST	0.	0.	0.	6.	20.	32.	56.	98.	134.	161.	174.	170.	142.	60.	0.	0.	0.	1053.	125.	185.	83.	111.
WEST	0.	0.	0.	6.	20.	32.	41.	47.	49.	91.	125.	143.	136.	65.	0.	0.	0.	753.	105.	147.	73.	93.
NORTHWEST	0.	0.	0.	6.	20.	32.	41.	47.	49.	47.	41.	50.	61.	35.	0.	0.	0.	429.	82.	106.	63.	74.
NORTH	0.	0.	0.	6.	20.	32.	41.	47.	49.	47.	41.	32.	20.	6.	0.	0.	0.	340.	76.	95.	60.	69.
NORTHEAST	0.	0.	0.	35.	61.	50.	41.	47.	49.	47.	41.	32.	20.	6.	0.	0.	0.	429.	82.	106.	63.	74.
EAST	0.	0.	0.	65.	136.	143.	125.	91.	49.	47.	41.	32.	20.	6.	0.	0.	0.	753.	105.	147.	73.	93.
SOUTHEAST	0.	0.	0.	60.	142.	170.	174.	161.	134.	98.	56.	32.	20.	6.	0.	0.	0.	1053.	125.	185.	83.	111.
HORIZ.	0.	0.	0.	17.	59.	118.	156.	180.	188.	180.	156.	118.	69.	17.	0.	0.	0.	1265.	140.	212.	90.	123.

MONTH	3	HO	2871.	TOD	60.	TOT	56.	KT	577	KD	.177										
ORIENTATION																					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
												SATGS		SATGS		SATGS		SATGS			
SOUTH	0.	0.	0.	28.	70.	107.	135.	154.	160.	154.	135.	107.	70.	28.	0.	0.	1147.	133.	193.	93.	123.
SOUTHWEST	0.	0.	0.	13.	27.	39.	48.	89.	129.	159.	176.	176.	155.	102.	0.	0.	1115.	131.	189.	92.	121.
WEST	0.	0.	0.	13.	27.	39.	48.	54.	56.	104.	142.	165.	166.	123.	0.	0.	938.	120.	169.	87.	111.
NORTHWEST	0.	0.	0.	13.	27.	39.	48.	54.	56.	54.	53.	80.	95.	80.	0.	0.	600.	98.	130.	76.	91.
NORTH	0.	0.	0.	13.	27.	39.	48.	54.	56.	54.	48.	39.	27.	13.	0.	0.	419.	87.	108.	70.	81.
NORTHEAST	0.	0.	0.	80.	95.	80.	53.	54.	56.	54.	48.	39.	27.	13.	0.	0.	600.	98.	130.	76.	91.
EAST	0.	0.	0.	123.	166.	165.	142.	104.	56.	54.	48.	39.	27.	13.	0.	0.	938.	120.	169.	87.	111.
SOUTHEAST	0.	0.	0.	102.	155.	176.	176.	159.	129.	89.	48.	39.	27.	13.	0.	0.	1115.	131.	189.	92.	121.
HORIZ.	0.	0.	0.	43.	101.	154.	195.	220.	229.	220.	195.	154.	101.	43.	0.	0.	1655.	166.	252.	110.	153.



LOCATION FORT WORTH, TEXAS LATITUDE 32 DEGREES 50 MINUTES

MONTH	4	HO	3355.	TOD	69.	TOT	66.	KT	.556	KD	.180						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	6.	19.	47.	78.	103.	119.	125.	119.	103.	78.	47.	19.	6.	0.	0.
SOUTHWEST	0.	0.	6.	19.	33.	44.	53.	70.	106.	133.	149.	150.	135.	99.	31.	0.	0.
WEST	0.	0.	6.	19.	33.	44.	53.	59.	61.	104.	139.	160.	163.	137.	48.	0.	0.
NORTHWEST	0.	0.	6.	19.	33.	44.	53.	59.	61.	59.	78.	102.	115.	106.	41.	0.	0.
NORTH	0.	0.	13.	24.	33.	44.	53.	59.	61.	59.	53.	44.	33.	24.	13.	0.	0.
NORTHEAST	0.	0.	41.	106.	115.	102.	78.	59.	61.	59.	53.	44.	33.	19.	6.	0.	0.
EAST	0.	0.	48.	137.	163.	160.	139.	104.	61.	59.	53.	44.	33.	19.	6.	0.	0.
SOUTHEAST	0.	0.	31.	99.	135.	150.	149.	133.	106.	70.	53.	44.	33.	19.	6.	0.	0.
HORIZ.	0.	0.	14.	66.	122.	171.	208.	232.	241.	232.	208.	171.	122.	66.	14.	0.	0.
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MONTH	5	HO	3631.	TOD	76.	TOT	73.	KT	.585	KD	.176						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	10.	23.	36.	60.	84.	100.	105.	100.	84.	60.	36.	23.	10.	0.	0.
SOUTHWEST	0.	0.	10.	23.	36.	47.	56.	61.	93.	121.	138.	141.	128.	99.	48.	0.	0.
WEST	0.	0.	10.	23.	36.	47.	56.	61.	63.	108.	144.	167.	173.	153.	88.	0.	0.
NORTHWEST	0.	0.	10.	23.	36.	47.	56.	61.	63.	67.	98.	123.	137.	131.	82.	0.	0.
NORTH	0.	0.	34.	46.	42.	47.	56.	61.	63.	61.	56.	47.	42.	46.	34.	0.	0.
NORTHEAST	0.	0.	82.	131.	137.	123.	98.	67.	63.	61.	56.	47.	36.	23.	10.	0.	0.
EAST	0.	0.	88.	153.	173.	167.	144.	108.	63.	61.	56.	47.	36.	23.	10.	0.	0.
SOUTHEAST	0.	0.	48.	99.	128.	141.	138.	121.	93.	61.	56.	47.	36.	23.	10.	0.	0.
HORIZ.	0.	0.	30.	86.	142.	191.	229.	254.	262.	254.	229.	191.	142.	86.	30.	0.	0.
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MONTH	6	HO	3724.	TOD	84.	TOT	81.	KT	.654	KD	.161						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	1.	11.	24.	37.	52.	78.	95.	101.	95.	78.	52.	37.	24.	11.	1.	0.
SOUTHWEST	0.	1.	11.	24.	37.	48.	56.	62.	90.	124.	145.	151.	139.	108.	57.	1.	0.
WEST	0.	1.	11.	24.	37.	48.	56.	62.	63.	116.	160.	189.	198.	179.	112.	1.	0.
NORTHWEST	0.	1.	11.	24.	37.	48.	56.	62.	63.	77.	114.	145.	163.	159.	109.	1.	0.
NORTH	0.	1.	48.	60.	54.	48.	56.	62.	63.	62.	56.	48.	54.	60.	48.	1.	0.
NORTHEAST	0.	1.	109.	159.	163.	145.	114.	77.	63.	62.	56.	48.	37.	24.	11.	1.	0.
EAST	0.	1.	112.	179.	198.	189.	160.	116.	63.	62.	56.	48.	37.	24.	11.	1.	0.
SOUTHEAST	0.	1.	57.	108.	139.	151.	145.	124.	90.	62.	56.	48.	37.	24.	11.	1.	0.
HORIZ.	0.	1.	39.	101.	163.	218.	260.	287.	296.	287.	260.	218.	163.	101.	39.	1.	0.

LOCATION	FORT WORTH, TEXAS										LATITUDE 32 DEGREES 50 MINUTES																	
MONTH	7	HO	3626.	TON	88.	TOT	85.	KT	.624										.16A									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY				
											14	15	16	17	18	19	20	SAT6S	SAT6D	SAT6S		SAT6D						
SOUTH	0.	0.	10.	23.	36.	60.	87.	103.	109.	103.	87.	60.	36.	23.	10.	0.	0.	748.	132.	166.	110.	130.						
SOUTHWEST	0.	0.	10.	23.	36.	47.	56.	61.	96.	128.	147.	151.	138.	106.	50.	0.	0.	1048.	150.	197.	120.	148.						
WEST	0.	0.	10.	23.	36.	47.	56.	61.	63.	113.	154.	181.	187.	165.	93.	0.	0.	1190.	158.	212.	125.	156.						
NORTHWEST	0.	0.	10.	23.	36.	47.	56.	61.	63.	68.	104.	132.	148.	141.	87.	0.	0.	977.	146.	190.	118.	144.						
NORTH	0.	0.	36.	49.	43.	47.	56.	61.	63.	61.	56.	47.	43.	49.	36.	0.	0.	648.	126.	155.	107.	124.						
NORTHEAST	0.	0.	87.	141.	148.	132.	104.	68.	63.	61.	56.	47.	36.	23.	10.	0.	0.	977.	146.	190.	118.	144.						
EAST	0.	0.	93.	165.	187.	181.	154.	113.	63.	61.	56.	47.	36.	23.	10.	0.	0.	1190.	158.	212.	125.	156.						
SOUTHEAST	0.	0.	50.	106.	139.	151.	147.	128.	96.	61.	56.	47.	36.	23.	10.	0.	0.	1048.	150.	197.	120.	148.						
HORIZ.	0.	0.	30.	90.	151.	204.	245.	271.	280.	271.	245.	204.	151.	90.	30.	0.	0.	2262.	222.	324.	162.	221.						
MONTH	8	HO	3329.	TON	89.	TOT	85.	KT	.653										.161									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY				
											14	15	16	17	18	19	20	SAT6S	SAT6D	SAT6S		SAT6D						
SOUTH	0.	0.	5.	19.	32.	44.	53.	73.	120.	156.	177.	181.	163.	119.	33.	0.	0.	976.	150.	197.	119.	144.						
SOUTHWEST	0.	0.	5.	19.	32.	44.	53.	73.	120.	156.	177.	181.	163.	119.	33.	0.	0.	1175.	162.	219.	125.	156.						
WEST	0.	0.	5.	19.	32.	44.	53.	59.	61.	118.	164.	194.	200.	167.	53.	0.	0.	1169.	162.	218.	125.	156.						
NORTHWEST	0.	0.	5.	19.	32.	44.	53.	59.	61.	59.	86.	120.	138.	128.	45.	0.	0.	849.	142.	183.	114.	137.						
NORTH	0.	0.	14.	25.	32.	44.	53.	59.	61.	59.	53.	44.	32.	25.	14.	0.	0.	515.	121.	146.	103.	116.						
NORTHEAST	0.	0.	45.	128.	138.	120.	86.	59.	61.	59.	53.	44.	32.	19.	5.	0.	0.	849.	142.	183.	114.	137.						
EAST	0.	0.	53.	167.	200.	194.	164.	118.	61.	59.	53.	44.	32.	19.	5.	0.	0.	1169.	162.	218.	125.	156.						
SOUTHEAST	0.	0.	33.	119.	163.	181.	177.	156.	120.	73.	53.	44.	32.	19.	5.	0.	0.	1175.	162.	219.	125.	156.						
HORIZ.	0.	0.	13.	74.	140.	199.	245.	274.	284.	274.	245.	199.	140.	74.	13.	0.	0.	2174.	225.	330.	160.	217.						
MONTH	9	HO	2853.	TON	81.	TOT	78.	KT	.634										.166									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY				
											14	15	16	17	18	19	20	SAT6S	SAT6D	SAT6S		SAT6D						
SOUTH	0.	0.	0.	29.	74.	116.	149.	169.	176.	169.	149.	116.	74.	29.	0.	0.	0.	1252.	167.	232.	121.	154.						
SOUTHWEST	0.	0.	0.	13.	26.	39.	48.	54.	56.	112.	157.	185.	173.	110.	0.	0.	0.	1214.	164.	227.	120.	152.						
WEST	0.	0.	0.	13.	26.	39.	48.	54.	56.	112.	157.	185.	173.	110.	0.	0.	0.	1010.	150.	203.	113.	139.						
NORTHWEST	0.	0.	0.	13.	26.	39.	48.	54.	56.	54.	54.	87.	105.	87.	0.	0.	0.	623.	124.	156.	100.	116.						
NORTH	0.	0.	0.	13.	26.	39.	48.	54.	56.	54.	48.	39.	26.	13.	0.	0.	0.	416.	110.	131.	92.	103.						
NORTHEAST	0.	0.	0.	87.	105.	87.	54.	54.	56.	54.	48.	39.	26.	13.	0.	0.	0.	623.	124.	156.	100.	116.						
EAST	0.	0.	0.	134.	185.	185.	157.	112.	56.	54.	48.	39.	26.	13.	0.	0.	0.	1010.	150.	203.	113.	139.						
SOUTHEAST	0.	0.	0.	110.	173.	197.	196.	176.	141.	94.	48.	39.	26.	13.	0.	0.	0.	1214.	164.	227.	120.	152.						
HORIZ.	0.	0.	0.	44.	109.	168.	214.	242.	252.	242.	214.	168.	109.	44.	0.	0.	0.	1808.	204.	299.	140.	187.						

LOCATION	FORT WORTH, TEXAS	LATITUDE	32 DEGREES	50 MINUTES
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MONTH	10	HO	2301.	TON	71.	TOT	68.	KT	.612	KD	.171						
ORIENTATION																	
HOURLY SOLAR RADIATION																	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	25.	88.	135.	170.	191.	109.	191.	170.	135.	88.	25.	0.	0.	0.
SOUTHWEST	0.	0.	0.	6.	19.	32.	60.	110.	155.	148.	204.	200.	165.	63.	0.	0.	0.
WEST	0.	0.	0.	6.	19.	32.	41.	47.	49.	102.	143.	166.	157.	68.	0.	0.	0.
NORTHWEST	0.	0.	0.	6.	19.	32.	41.	47.	49.	47.	41.	54.	68.	36.	0.	0.	0.
NORTH	0.	0.	0.	6.	19.	32.	41.	47.	49.	47.	41.	32.	19.	6.	0.	0.	0.
NORTHEAST	0.	0.	0.	36.	68.	54.	41.	47.	49.	47.	41.	32.	19.	6.	0.	0.	0.
EAST	0.	0.	0.	68.	157.	166.	143.	102.	49.	47.	41.	32.	19.	6.	0.	0.	0.
SOUTHEAST	0.	0.	0.	63.	165.	200.	204.	183.	155.	110.	60.	32.	19.	6.	0.	0.	0.
HORIZ.	0.	0.	0.	16.	74.	131.	175.	203.	212.	203.	175.	131.	74.	16.	0.	0.	0.
												DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD		
												1417.	170. 251.		114. 151.		
												1202.	155. 223.		107. 138.		
												829.	129. 176.		95. 117.		
												439.	102. 127.		82. 94.		
												338.	95. 114.		79. 88.		
												439.	102. 127.		82. 94.		
												829.	129. 176.		95. 117.		
												1202.	155. 223.		107. 138.		
												1409.	170. 250.		113. 150.		

LOCATION FORT WORTH, TEXAS LATITUDE 32 DEGREES 50 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	140.	137.	133.	120.	119.	124.	132.	150.	167.	170.	162.	156.	143.
SOUTHWEST	121.	125.	131.	129.	135.	145.	150.	162.	164.	155.	140.	132.	141.
WEST	91.	105.	120.	129.	143.	157.	158.	162.	150.	129.	105.	94.	129.
NORTHWEST	70.	82.	98.	115.	131.	146.	146.	142.	124.	102.	81.	70.	109.
NORTH	68.	76.	87.	99.	114.	126.	126.	121.	110.	95.	79.	69.	97.
NORTHEAST	70.	82.	98.	115.	131.	146.	146.	142.	124.	102.	81.	70.	109.
EAST	91.	105.	120.	129.	143.	157.	158.	162.	150.	129.	105.	94.	129.
SOUTHEAST	121.	125.	131.	129.	135.	145.	150.	162.	164.	155.	140.	132.	141.
HORIZ.	121.	140.	166.	179.	202.	225.	222.	225.	204.	170.	137.	122.	176.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	216.	206.	193.	162.	153.	155.	166.	197.	232.	251.	246.	241.	202.
SOUTHWEST	180.	185.	189.	179.	181.	192.	197.	219.	227.	223.	206.	198.	198.
WEST	127.	147.	169.	179.	194.	213.	212.	218.	203.	176.	143.	130.	176.
NORTHWEST	87.	106.	130.	152.	174.	194.	190.	183.	156.	127.	99.	86.	140.
NORTH	84.	95.	108.	124.	143.	158.	155.	146.	131.	114.	95.	84.	120.
NORTHEAST	87.	106.	130.	152.	174.	194.	190.	183.	156.	127.	99.	86.	140.
EAST	127.	147.	169.	179.	194.	213.	212.	218.	203.	176.	143.	130.	176.
SOUTHEAST	180.	185.	189.	179.	181.	192.	197.	219.	227.	223.	206.	198.	198.
HORIZ.	180.	212.	252.	269.	299.	333.	324.	330.	299.	250.	201.	180.	261.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	84.	89.	93.	93.	98.	105.	110.	119.	121.	114.	99.	91.	101.
SOUTHWEST	76.	83.	92.	99.	107.	117.	120.	125.	120.	107.	90.	81.	101.
WEST	64.	73.	87.	99.	112.	124.	125.	125.	113.	95.	75.	66.	96.
NORTHWEST	54.	63.	76.	91.	105.	118.	118.	114.	100.	82.	65.	56.	87.
NORTH	54.	60.	70.	82.	95.	106.	107.	103.	92.	79.	64.	55.	81.
NORTHEAST	54.	63.	76.	91.	105.	118.	118.	114.	100.	82.	65.	56.	87.
EAST	64.	73.	87.	99.	112.	124.	125.	125.	113.	95.	75.	66.	96.
SOUTHEAST	76.	83.	92.	99.	107.	117.	120.	125.	120.	107.	90.	81.	101.
HORIZ.	76.	90.	110.	125.	146.	164.	162.	160.	140.	113.	89.	77.	121.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	116.	121.	123.	116.	117.	123.	130.	144.	154.	151.	135.	126.	130.
SOUTHWEST	101.	111.	121.	125.	133.	145.	148.	156.	152.	138.	118.	108.	130.
WEST	79.	93.	111.	125.	141.	157.	156.	156.	139.	117.	92.	80.	121.
NORTHWEST	62.	74.	91.	111.	129.	146.	144.	137.	116.	94.	72.	62.	103.
NORTH	61.	69.	81.	96.	111.	125.	124.	116.	103.	88.	71.	61.	92.
NORTHEAST	62.	74.	91.	111.	129.	146.	144.	137.	116.	94.	72.	62.	103.
EAST	79.	93.	111.	125.	141.	157.	156.	156.	139.	117.	92.	80.	121.
SOUTHEAST	101.	111.	121.	125.	133.	145.	148.	156.	152.	138.	118.	108.	130.
HORIZ.	101.	123.	153.	174.	201.	228.	221.	217.	187.	150.	116.	101.	164.







LOCATION		FRESNO, CALIFORNIA		LATITUDE		36 DEGREES		46 MINUTES																
MONTH	7	H0	3628.	TOD	88.	TOT	82.	KT	.682	KD	.154													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGD	
SOUTH		0.	1.	11.	23.	36.	74.	105.	125.	132.	125.	105.	74.	36.	23.	11.	1.	0.	881.	139.	178.	112.	135.	
SOUTHWEST		0.	1.	11.	23.	36.	47.	55.	63.	111.	149.	171.	175.	161.	124.	64.	1.	0.	1191.	157.	209.	123.	154.	
WEST		0.	1.	11.	23.	36.	47.	55.	60.	62.	120.	169.	202.	212.	191.	118.	1.	0.	1306.	163.	221.	127.	161.	
NORTHWEST		0.	1.	11.	23.	36.	47.	55.	60.	62.	60.	100.	137.	160.	160.	110.	1.	0.	1020.	147.	192.	117.	144.	
NORTH		0.	1.	43.	48.	36.	47.	55.	60.	62.	60.	55.	47.	36.	48.	43.	1.	0.	639.	125.	153.	104.	121.	
NORTHEAST		0.	1.	110.	160.	160.	137.	100.	60.	62.	60.	55.	47.	36.	23.	11.	1.	0.	1020.	147.	192.	117.	144.	
EAST		0.	1.	118.	191.	212.	202.	169.	120.	62.	60.	55.	47.	36.	23.	11.	1.	0.	1306.	163.	221.	127.	161.	
SOUTHEAST		0.	1.	64.	124.	161.	175.	171.	149.	111.	63.	55.	47.	36.	23.	11.	1.	0.	1191.	157.	209.	123.	154.	
HORIZ.		0.	1.	38.	101.	165.	222.	265.	293.	303.	293.	265.	222.	165.	101.	38.	1.	0.	2474.	231.	341.	167.	232.	

DAILY TOTAL RADIATION

SOUTH		881.	139.	178.	112.	135.
SOUTHWEST		1191.	157.	209.	123.	154.
WEST		1306.	163.	221.	127.	161.
NORTHWEST		1020.	147.	192.	117.	144.
NORTH		639.	125.	153.	104.	121.
NORTHEAST		1020.	147.	192.	117.	144.
EAST		1306.	163.	221.	127.	161.
SOUTHEAST		1191.	157.	209.	123.	154.
HORIZ.		2474.	231.	341.	167.	232.

MONTH	8	H0	3271.	TOD	85.	TOT	79.	KT	.686	KD	.153
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DAILY TOTAL RADIATION

SOUTH		1120.	154.	208.	118.	147.
SOUTHWEST		1290.	165.	226.	124.	157.
WEST		1229.	161.	220.	122.	154.
NORTHWEST		852.	138.	178.	109.	131.
NORTH		501.	116.	140.	97.	110.
NORTHEAST		852.	138.	178.	109.	131.
EAST		1229.	161.	220.	122.	154.
SOUTHEAST		1290.	165.	226.	124.	157.
HORIZ.		2244.	224.	331.	156.	215.

MONTH	9	H0	2725.	TOD	79.	TOT	73.	KT	.665	KD	.158
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DAILY TOTAL RADIATION

SOUTH		1398.	174.	247.	121.	158.
SOUTHWEST		1308.	168.	236.	118.	153.
WEST		1035.	149.	203.	109.	136.
NORTHWEST		599.	119.	151.	94.	110.
NORTH		395.	105.	126.	87.	97.
NORTHEAST		599.	119.	151.	94.	110.
EAST		1035.	149.	203.	109.	136.
SOUTHEAST		1308.	168.	236.	118.	153.
HORIZ.		1811.	202.	296.	135.	183.

LOCATION	FRESNO, CALIFORNIA										LATITUDE 36 DEGREES 46 MINUTES											
MONTH 10	HO 2118.										TOT 64. KT .635 KD .165											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD			
SOUTH	0.	0.	0.	20.	91.	145.	184.	209.	217.	209.	184.	145.	91.	20.	0.	0.	0.	1516.	176.	263.	113.	152.
SOUTHWEST	0.	0.	0.	5.	17.	29.	64.	119.	167.	202.	219.	212.	170.	50.	0.	0.	0.	1253.	157.	229.	104.	137.
WEST	0.	0.	0.	5.	17.	29.	38.	44.	46.	102.	147.	171.	159.	53.	0.	0.	0.	811.	126.	173.	90.	111.
NORTHWEST	0.	0.	0.	5.	17.	29.	38.	44.	46.	44.	38.	48.	65.	28.	0.	0.	0.	400.	97.	120.	77.	87.
NORTH	0.	0.	0.	5.	17.	29.	38.	44.	46.	44.	38.	29.	17.	5.	0.	0.	0.	310.	91.	108.	74.	82.
NORTHEAST	0.	0.	0.	28.	65.	48.	38.	44.	46.	44.	38.	29.	17.	5.	0.	0.	0.	400.	97.	120.	77.	87.
EAST	0.	0.	0.	53.	159.	171.	147.	102.	46.	44.	38.	29.	17.	5.	0.	0.	0.	811.	126.	173.	90.	111.
SOUTHEAST	0.	0.	0.	50.	170.	212.	219.	202.	167.	119.	64.	29.	17.	5.	0.	0.	0.	1253.	157.	229.	104.	137.
HORIZ.	0.	0.	0.	11.	68.	124.	169.	197.	207.	197.	169.	124.	68.	11.	0.	0.	0.	1345.	164.	241.	107.	142.
MONTH 11	HO 1594.										TOT 53. KT .512 KD .186											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD			
SOUTH	0.	0.	0.	0.	61.	113.	148.	168.	175.	168.	148.	113.	61.	0.	0.	0.	0.	1153.	147.	220.	90.	121.
SOUTHWEST	0.	0.	0.	0.	10.	22.	62.	101.	134.	157.	164.	151.	98.	0.	0.	0.	0.	899.	127.	184.	82.	106.
WEST	0.	0.	0.	0.	10.	21.	30.	35.	37.	75.	102.	112.	84.	0.	0.	0.	0.	507.	97.	129.	70.	83.
NORTHWEST	0.	0.	0.	0.	10.	21.	30.	35.	37.	35.	30.	21.	27.	0.	0.	0.	0.	246.	76.	92.	61.	68.
NORTH	0.	0.	0.	0.	10.	21.	30.	35.	37.	35.	30.	21.	10.	0.	0.	0.	0.	229.	75.	90.	61.	67.
NORTHEAST	0.	0.	0.	0.	27.	21.	30.	35.	37.	35.	30.	21.	10.	0.	0.	0.	0.	246.	76.	92.	61.	68.
EAST	0.	0.	0.	0.	84.	112.	102.	75.	37.	35.	30.	21.	10.	0.	0.	0.	0.	507.	97.	129.	70.	83.
SOUTHEAST	0.	0.	0.	0.	98.	151.	164.	157.	134.	101.	62.	22.	10.	0.	0.	0.	0.	899.	127.	184.	82.	106.
HORIZ.	0.	0.	0.	0.	30.	73.	107.	129.	137.	129.	107.	73.	30.	0.	0.	0.	0.	816.	121.	172.	80.	101.
MONTH 12	HO 1394.										TOT 46. KT .440 KD .185											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD			
SOUTH	0.	0.	0.	0.	42.	91.	121.	139.	145.	139.	121.	91.	42.	0.	0.	0.	0.	931.	125.	186.	76.	101.
SOUTHWEST	0.	0.	0.	0.	7.	22.	54.	85.	112.	129.	133.	118.	64.	0.	0.	0.	0.	722.	108.	155.	69.	88.
WEST	0.	0.	0.	0.	7.	17.	25.	30.	32.	60.	81.	85.	53.	0.	0.	0.	0.	391.	81.	107.	59.	69.
NORTHWEST	0.	0.	0.	0.	7.	17.	25.	30.	32.	30.	25.	17.	16.	0.	0.	0.	0.	199.	65.	78.	53.	58.
NORTH	0.	0.	0.	0.	7.	17.	25.	30.	32.	30.	25.	17.	7.	0.	0.	0.	0.	191.	64.	77.	52.	57.
NORTHEAST	0.	0.	0.	0.	16.	17.	25.	30.	32.	30.	25.	17.	7.	0.	0.	0.	0.	199.	65.	78.	53.	58.
EAST	0.	0.	0.	0.	53.	85.	81.	60.	32.	30.	25.	17.	7.	0.	0.	0.	0.	391.	81.	107.	59.	69.
SOUTHEAST	0.	0.	0.	0.	64.	118.	133.	129.	112.	85.	54.	22.	7.	0.	0.	0.	0.	722.	108.	155.	69.	88.
HORIZ.	0.	0.	0.	0.	18.	53.	82.	100.	107.	100.	82.	53.	18.	0.	0.	0.	0.	615.	99.	140.	66.	82.



LOCATION FRESNO, CALIFORNIA LATITUDE 36 DEGREES 46 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	126.	143.	145.	127.	125.	127.	139.	154.	174.	176.	147.	125.	142.
SOUTHWEST	109.	129.	139.	137.	142.	148.	157.	165.	168.	157.	127.	108.	140.
WEST	83.	105.	123.	134.	149.	158.	163.	161.	149.	126.	97.	81.	127.
NORTHWEST	66.	81.	97.	114.	132.	143.	147.	138.	119.	97.	76.	65.	106.
NORTH	65.	76.	85.	95.	111.	122.	125.	116.	105.	91.	75.	64.	94.
NORTHEAST	66.	81.	97.	114.	132.	143.	147.	138.	119.	97.	76.	65.	106.
EAST	83.	105.	123.	134.	149.	158.	163.	161.	149.	126.	97.	81.	127.
SOUTHEAST	109.	129.	139.	137.	142.	148.	157.	165.	168.	157.	127.	108.	140.
HORIZ.	105.	137.	170.	188.	215.	230.	231.	224.	202.	164.	121.	99.	174.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	190.	216.	215.	178.	164.	163.	178.	208.	247.	263.	220.	186.	202.
SOUTHWEST	159.	190.	205.	195.	195.	199.	209.	226.	236.	229.	184.	155.	199.
WEST	112.	146.	175.	189.	207.	217.	221.	220.	203.	173.	129.	107.	175.
NORTHWEST	81.	104.	128.	153.	178.	192.	192.	178.	151.	120.	92.	78.	137.
NORTH	79.	94.	105.	119.	135.	153.	153.	140.	126.	108.	90.	77.	115.
NORTHEAST	81.	104.	128.	153.	178.	192.	192.	178.	151.	120.	92.	78.	137.
EAST	112.	146.	175.	189.	207.	217.	221.	220.	203.	173.	129.	107.	175.
SOUTHEAST	159.	190.	205.	195.	195.	199.	209.	226.	236.	229.	184.	155.	199.
HORIZ.	152.	206.	260.	288.	324.	344.	341.	331.	296.	241.	172.	140.	258.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	77.	91.	98.	96.	99.	104.	112.	118.	121.	113.	90.	76.	100.
SOUTHWEST	70.	85.	96.	101.	109.	116.	123.	124.	118.	104.	82.	69.	100.
WEST	59.	74.	88.	99.	113.	122.	127.	122.	109.	90.	70.	59.	94.
NORTHWEST	52.	63.	74.	88.	104.	114.	117.	109.	94.	77.	61.	53.	84.
NORTH	52.	61.	68.	78.	91.	100.	104.	97.	87.	74.	61.	52.	77.
NORTHEAST	52.	63.	74.	88.	104.	114.	117.	109.	94.	77.	61.	53.	84.
EAST	59.	74.	88.	99.	113.	122.	127.	122.	109.	90.	70.	59.	94.
SOUTHEAST	70.	85.	96.	101.	109.	116.	123.	124.	118.	104.	82.	69.	100.
HORIZ.	68.	89.	111.	129.	152.	166.	167.	156.	135.	107.	80.	66.	119.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	103.	125.	133.	123.	122.	126.	135.	147.	158.	152.	121.	101.	129.
SOUTHWEST	91.	113.	129.	133.	141.	147.	154.	157.	153.	137.	106.	88.	129.
WEST	72.	93.	114.	130.	147.	158.	161.	154.	136.	111.	83.	69.	119.
NORTHWEST	59.	74.	90.	110.	130.	143.	144.	131.	110.	87.	68.	58.	100.
NORTH	58.	69.	79.	91.	108.	119.	121.	110.	97.	82.	67.	57.	88.
NORTHEAST	59.	74.	90.	110.	130.	143.	143.	131.	110.	87.	68.	58.	100.
EAST	72.	93.	114.	130.	147.	158.	161.	154.	136.	111.	83.	69.	119.
SOUTHEAST	91.	113.	129.	133.	141.	147.	154.	157.	153.	137.	106.	88.	129.
HORIZ.	88.	120.	156.	184.	216.	235.	232.	215.	183.	142.	101.	82.	163.

LOCATION	GAINESVILLE, FLORIDA										LATITUDE 29 DEGREES 39 MINUTES											
MONTH 1	HO	1986.	TOD	62.	TOT	59.	KT	.535	KD	.183												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	0.	6.	79.	123.	153.	171.	177.	171.	153.	123.	79.	6.	0.	0.	0.	1242.	154.	229.	99.	132.
SOUTHWEST	0.	0.	0.	2.	15.	27.	63.	104.	138.	163.	175.	168.	130.	10.	0.	0.	0.	995.	136.	196.	91.	117.
WEST	0.	0.	0.	2.	15.	27.	36.	42.	44.	44.	115.	130.	114.	10.	0.	0.	0.	618.	108.	145.	79.	96.
NORTHWEST	0.	0.	0.	2.	15.	27.	36.	42.	44.	42.	36.	31.	40.	5.	0.	0.	0.	320.	86.	105.	70.	78.
NORTH	0.	0.	0.	2.	15.	27.	36.	42.	44.	42.	36.	27.	15.	2.	0.	0.	0.	288.	83.	101.	69.	76.
NORTHEAST	0.	0.	0.	5.	40.	31.	36.	42.	44.	42.	36.	27.	15.	2.	0.	0.	0.	320.	86.	105.	70.	78.
EAST	0.	0.	0.	10.	114.	130.	115.	84.	44.	42.	36.	27.	15.	2.	0.	0.	0.	618.	108.	145.	79.	96.
SOUTHEAST	0.	0.	0.	10.	130.	168.	175.	163.	138.	104.	63.	27.	15.	2.	0.	0.	0.	995.	136.	196.	91.	117.
HORIZ.	0.	0.	0.	4.	49.	98.	136.	160.	148.	160.	136.	98.	49.	4.	0.	0.	0.	1061.	140.	204.	94.	121.
MONTH 2	HO	2476.	TOD	63.	TOT	60.	KT	.560	KD	.180												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	0.	29.	80.	119.	148.	165.	171.	165.	148.	119.	80.	29.	0.	0.	0.	1254.	149.	220.	101.	134.
SOUTHWEST	0.	0.	0.	7.	21.	34.	54.	98.	136.	165.	180.	178.	151.	73.	0.	0.	0.	1098.	139.	200.	96.	124.
WEST	0.	0.	0.	7.	21.	34.	43.	49.	51.	96.	132.	152.	146.	79.	0.	0.	0.	812.	119.	165.	87.	108.
NORTHWEST	0.	0.	0.	7.	21.	34.	43.	49.	51.	49.	43.	57.	68.	43.	0.	0.	0.	467.	95.	121.	75.	88.
NORTH	0.	0.	0.	7.	21.	34.	43.	49.	51.	49.	43.	34.	21.	7.	0.	0.	0.	362.	88.	108.	72.	82.
NORTHEAST	0.	0.	0.	43.	68.	57.	43.	49.	51.	49.	43.	34.	21.	7.	0.	0.	0.	467.	95.	121.	75.	88.
EAST	0.	0.	0.	79.	146.	152.	132.	96.	51.	49.	43.	34.	21.	7.	0.	0.	0.	812.	119.	165.	87.	108.
SOUTHEAST	0.	0.	0.	73.	151.	178.	180.	165.	136.	98.	54.	34.	21.	7.	0.	0.	0.	1098.	139.	200.	96.	124.
HORIZ.	0.	0.	0.	21.	77.	129.	170.	196.	204.	196.	170.	129.	77.	21.	0.	0.	0.	1388.	159.	236.	105.	141.
MONTH 3	HO	2967.	TOD	67.	TOT	64.	KT	.568	KD	.178												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	0.	27.	66.	100.	127.	144.	150.	144.	127.	100.	66.	27.	0.	0.	0.	1078.	137.	193.	98.	127.
SOUTHWEST	0.	0.	0.	13.	28.	40.	50.	84.	123.	152.	169.	170.	151.	100.	0.	0.	0.	1080.	137.	193.	98.	127.
WEST	0.	0.	0.	13.	28.	40.	50.	56.	58.	104.	141.	163.	164.	123.	0.	0.	0.	939.	128.	177.	94.	118.
NORTHWEST	0.	0.	0.	13.	28.	40.	50.	56.	58.	56.	60.	85.	97.	81.	0.	0.	0.	623.	107.	140.	84.	100.
NORTH	0.	0.	0.	13.	28.	40.	50.	56.	58.	56.	50.	40.	28.	13.	0.	0.	0.	432.	95.	118.	78.	89.
NORTHEAST	0.	0.	0.	81.	97.	85.	60.	56.	58.	56.	50.	40.	28.	13.	0.	0.	0.	623.	107.	140.	84.	100.
EAST	0.	0.	0.	123.	164.	163.	141.	104.	58.	56.	50.	40.	28.	13.	0.	0.	0.	939.	128.	177.	94.	118.
SOUTHEAST	0.	0.	0.	100.	151.	170.	169.	152.	123.	84.	50.	40.	28.	13.	0.	0.	0.	1080.	137.	193.	98.	127.
SORIZ.	0.	0.	0.	44.	103.	157.	198.	224.	233.	224.	198.	157.	103.	44.	0.	0.	0.	1684.	175.	263.	118.	162.

LOCATION GAINESVILLE, FLORIDA LATITUDE 29 DEGRFS 39 MINUTES

MONTH	4	HO	3392.	TOD	73.	TOT	69.	KT	587	KD	.176						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	5.	19.	44.	75.	100.	116.	122.	116.	100.	75.	44.	19.	5.	0.	0.
SOUTHWEST	0.	0.	5.	19.	33.	45.	55.	65.	105.	135.	153.	156.	141.	104.	28.	0.	0.
WEST	0.	0.	5.	19.	33.	45.	55.	60.	62.	110.	148.	172.	175.	147.	45.	0.	0.
NORTHWEST	0.	0.	5.	19.	33.	45.	55.	60.	62.	60.	88.	114.	126.	115.	38.	0.	0.
NORTH	0.	0.	12.	27.	33.	45.	55.	60.	62.	60.	55.	45.	33.	27.	12.	0.	0.
NORTHEAST	0.	0.	38.	115.	126.	114.	88.	60.	62.	60.	55.	45.	33.	19.	5.	0.	0.
EAST	0.	0.	45.	147.	175.	172.	148.	110.	62.	60.	55.	45.	33.	19.	5.	0.	0.
SOUTHEAST	0.	0.	28.	104.	141.	156.	153.	135.	105.	65.	55.	45.	33.	19.	5.	0.	0.
HORIZ.	0.	0.	12.	68.	129.	183.	224.	250.	259.	250.	224.	183.	129.	3.	12.	0.	0.

MONTH	5	HO	3621.	TOD	79.	TOT	74.	KT	.538	KD	.183						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	9.	23.	36.	51.	72.	86.	90.	86.	72.	51.	36.	23.	9.	0.	0.
SOUTHWEST	0.	0.	9.	23.	36.	47.	56.	61.	82.	107.	121.	124.	112.	85.	38.	0.	0.
WEST	0.	0.	9.	23.	36.	47.	56.	61.	63.	101.	132.	151.	154.	133.	70.	0.	0.
NORTHWEST	0.	0.	9.	23.	36.	47.	56.	61.	63.	72.	98.	117.	126.	116.	66.	0.	0.
NORTH	0.	0.	29.	45.	46.	47.	56.	61.	63.	61.	56.	47.	46.	45.	29.	0.	0.
NORTHEAST	0.	0.	66.	116.	126.	117.	98.	72.	63.	61.	56.	47.	36.	23.	9.	0.	0.
EAST	0.	0.	70.	133.	154.	151.	132.	101.	63.	61.	56.	47.	36.	23.	9.	0.	0.
SOUTHEAST	0.	0.	38.	85.	112.	124.	121.	107.	82.	61.	56.	47.	36.	23.	9.	0.	0.
HORIZ.	0.	0.	25.	77.	130.	176.	212.	235.	242.	235.	212.	176.	130.	77.	25.	0.	0.

MONTH	6	HO	3694.	TOD	83.	TOT	79.	KT	.531	KD	.184						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	11.	24.	37.	47.	63.	76.	81.	76.	63.	47.	37.	24.	11.	0.	0.
SOUTHWEST	0.	0.	11.	24.	37.	47.	56.	61.	75.	99.	113.	115.	104.	80.	39.	0.	0.
WEST	0.	0.	11.	24.	37.	47.	56.	61.	63.	100.	129.	147.	149.	131.	76.	0.	0.
NORTHWEST	0.	0.	11.	24.	37.	47.	56.	61.	63.	78.	102.	120.	128.	119.	74.	0.	0.
NORTH	0.	0.	35.	51.	53.	51.	56.	61.	63.	61.	56.	51.	53.	51.	35.	0.	0.
NORTHEAST	0.	0.	74.	119.	128.	120.	102.	78.	63.	61.	56.	47.	37.	24.	11.	0.	0.
EAST	0.	0.	76.	131.	149.	147.	129.	100.	63.	61.	56.	47.	37.	24.	11.	0.	0.
SOUTHEAST	0.	0.	39.	80.	104.	115.	113.	99.	75.	61.	56.	47.	37.	24.	11.	0.	0.
HORIZ.	0.	0.	29.	80.	131.	176.	211.	233.	240.	233.	211.	176.	131.	80.	29.	0.	0.





LOCATION	GAINESVILLE, FLORIDA	LATITUDE	29 DEGREES	39 MINUTES
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MONTH	10	HO	2441.	TOD	76.	TOT	73.	KT	.515	KT	.186
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ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	24.	71.	107.	133.	149.	155.	149.	133.	107.	71.	24.	0.	0.	0.	1122.	153.	216.	109.	139.
SOUTHWEST	0.	0.	0.	7.	21.	33.	53.	91.	124.	148.	160.	156.	130.	57.	0.	0.	0.	982.	143.	199.	105.	131.
WEST	0.	0.	0.	7.	21.	33.	42.	48.	50.	89.	119.	134.	126.	61.	0.	0.	0.	731.	126.	167.	97.	116.
NORTHWEST	0.	0.	0.	7.	21.	33.	42.	48.	50.	48.	42.	52.	60.	34.	0.	0.	0.	438.	106.	131.	87.	99.
NORTH	0.	0.	0.	7.	21.	33.	42.	48.	50.	48.	42.	33.	21.	7.	0.	0.	0.	354.	100.	120.	85.	94.
NORTHEAST	0.	0.	0.	34.	60.	52.	42.	48.	50.	48.	42.	33.	21.	7.	0.	0.	0.	438.	106.	131.	87.	99.
EAST	0.	0.	0.	61.	126.	134.	119.	89.	50.	48.	42.	33.	21.	7.	0.	0.	0.	731.	126.	167.	97.	116.
SOUTHEAST	0.	0.	0.	57.	130.	156.	160.	148.	124.	91.	53.	33.	21.	7.	0.	0.	0.	982.	143.	199.	105.	131.
HORIZ.	0.	0.	0.	18.	69.	117.	154.	178.	186.	178.	154.	117.	69.	18.	0.	0.	0.	1259.	162.	233.	114.	147.

MONTH	11	HO	1973.	TOD	67.	TOT	65.	KT	.537	KD	.183
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ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	5.	78.	123.	154.	172.	178.	172.	154.	123.	78.	5.	0.	0.	0.	1243.	159.	234.	105.	138.
SOUTHWEST	0.	0.	0.	0.	2.	15.	27.	63.	104.	139.	164.	175.	168.	128.	8.	0.	0.	994.	141.	201.	97.	123.
WEST	0.	0.	0.	0.	2.	15.	27.	36.	42.	44.	84.	115.	129.	112.	8.	0.	0.	614.	113.	150.	85.	101.
NORTHWEST	0.	0.	0.	0.	0.	2.	15.	27.	36.	42.	44.	42.	36.	31.	39.	4.	0.	317.	91.	110.	75.	84.
NORTH	0.	0.	0.	0.	2.	15.	27.	36.	42.	44.	42.	36.	27.	15.	2.	0.	0.	286.	88.	106.	74.	82.
NORTHEAST	0.	0.	0.	0.	4.	39.	31.	36.	42.	44.	42.	36.	27.	15.	2.	0.	0.	317.	91.	110.	75.	84.
EAST	0.	0.	0.	0.	8.	112.	129.	115.	84.	44.	42.	36.	27.	15.	2.	0.	0.	614.	113.	150.	85.	101.
SOUTHEAST	0.	0.	0.	0.	8.	128.	168.	175.	164.	139.	104.	63.	27.	15.	2.	0.	0.	994.	141.	201.	97.	123.
ORIZ.	0.	0.	0.	0.	4.	48.	97.	135.	160.	168.	160.	136.	97.	48.	4.	0.	0.	1058.	145.	209.	99.	127.

	MONTH	12	HQ	1787.	TOD	62.	TOT	60.	KT	.50A	KD	.187
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ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	0.	117.	146.	164.	170.	164.	146.	117.	70.	0.	0.	0.	0.	1164.	151.	224.	98.	128.
SOUTHWEST	0.	0.	0.	0.	0.	12.	26.	63.	100.	132.	154.	163.	153.	110.	0.	0.	0.	914.	132.	169.	80.	114.
WEST	0.	0.	0.	0.	0.	12.	24.	33.	39.	40.	76.	103.	114.	93.	0.	0.	0.	536.	103.	137.	78.	92.
NORTHWEST	0.	0.	0.	0.	0.	12.	24.	33.	39.	40.	39.	33.	24.	28.	0.	0.	0.	272.	83.	100.	69.	76.
NORTH	0.	0.	0.	0.	0.	12.	24.	33.	39.	40.	39.	33.	24.	12.	0.	0.	0.	257.	82.	98.	69.	75.
NORTHEAST	0.	0.	0.	0.	0.	28.	24.	33.	39.	40.	39.	33.	24.	12.	0.	0.	0.	272.	83.	100.	69.	76.
EAST	0.	0.	0.	0.	0.	93.	114.	103.	76.	40.	39.	33.	24.	12.	0.	0.	0.	536.	103.	137.	78.	92.
SOUTHEAST	0.	0.	0.	0.	0.	110.	153.	163.	154.	132.	100.	63.	26.	12.	0.	0.	0.	914.	132.	169.	80.	114.
SORIZ.	0.	0.	0.	1.	38.	82.	118.	140.	148.	140.	140.	118.	82.	38.	1.	0.	0.	906.	132.	188.	90.	113.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	154.	149.	137.	123.	118.	119.	122.	134.	149.	153.	159.	151.	139.
SOUTHWEST	136.	139.	137.	135.	134.	134.	136.	145.	149.	143.	141.	132.	138.
WEST	108.	119.	128.	137.	142.	144.	144.	147.	141.	126.	113.	103.	129.
NORTHWEST	86.	95.	107.	122.	133.	138.	136.	133.	122.	106.	91.	83.	113.
NORTH	83.	88.	95.	104.	117.	124.	121.	117.	111.	100.	88.	82.	103.
NORTHEAST	86.	95.	107.	122.	133.	138.	136.	133.	122.	106.	91.	83.	113.
EAST	108.	119.	128.	137.	142.	144.	144.	147.	141.	126.	113.	103.	129.
SOUTHEAST	136.	139.	137.	135.	134.	134.	136.	145.	149.	143.	141.	132.	138.
HORIZ.	140.	159.	175.	191.	197.	199.	197.	201.	188.	162.	145.	132.	174.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	229.	220.	193.	164.	148.	146.	151.	173.	201.	216.	234.	224.	191.
SOUTHWEST	196.	200.	193.	186.	175.	173.	176.	192.	201.	199.	201.	189.	190.
WEST	145.	165.	177.	189.	190.	191.	190.	195.	186.	167.	150.	137.	173.
NORTHWEST	105.	121.	140.	162.	174.	179.	176.	170.	153.	131.	110.	100.	143.
NORTH	101.	108.	118.	130.	146.	154.	150.	142.	133.	120.	106.	98.	125.
NORTHEAST	105.	121.	140.	162.	174.	179.	176.	170.	153.	131.	110.	100.	143.
EAST	145.	165.	177.	189.	190.	191.	190.	195.	186.	167.	150.	137.	173.
SOUTHEAST	196.	200.	193.	186.	175.	173.	176.	192.	201.	199.	201.	189.	190.
HORIZ.	204.	236.	263.	288.	287.	288.	283.	291.	269.	233.	209.	188.	253.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	99.	101.	98.	96.	96.	100.	102.	108.	113.	109.	105.	98.	102.
SOUTHWEST	91.	96.	98.	102.	105.	109.	111.	114.	113.	105.	97.	90.	103.
WEST	79.	87.	94.	104.	110.	114.	115.	115.	109.	97.	85.	78.	99.
NORTHWEST	70.	75.	84.	95.	105.	111.	110.	107.	100.	87.	75.	69.	91.
NORTH	69.	72.	78.	86.	96.	102.	102.	98.	94.	85.	74.	69.	85.
NORTHEAST	70.	75.	84.	95.	105.	111.	110.	107.	100.	87.	75.	69.	91.
EAST	79.	87.	94.	104.	110.	114.	115.	115.	109.	97.	85.	78.	99.
SOUTHEAST	91.	96.	98.	102.	105.	109.	111.	114.	113.	105.	97.	90.	103.
HORIZ.	94.	105.	118.	133.	141.	146.	145.	144.	133.	114.	99.	90.	122.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	132.	134.	127.	118.	113.	115.	119.	129.	139.	139.	138.	128.	127.
SOUTHWEST	117.	124.	127.	130.	129.	131.	133.	139.	139.	131.	123.	114.	128.
WEST	96.	108.	118.	132.	137.	141.	141.	141.	132.	116.	101.	92.	121.
NORTHWEST	78.	88.	100.	117.	128.	135.	133.	127.	115.	99.	84.	76.	107.
NORTH	76.	82.	89.	100.	112.	120.	118.	112.	105.	94.	82.	75.	97.
NORTHEAST	78.	88.	100.	117.	128.	135.	133.	127.	115.	99.	84.	76.	107.
EAST	96.	108.	118.	132.	137.	141.	141.	141.	132.	116.	101.	92.	121.
SOUTHEAST	117.	124.	127.	130.	129.	131.	133.	139.	139.	131.	123.	114.	128.
HORIZ.	121.	141.	162.	185.	192.	198.	194.	192.	173.	147.	127.	113.	162.

LOCATION		GLASGOW, MONTANA		LATITUDE 48 DEGREES 13 MINUTES																					
MONTH	1	H0	977.	TOD	13.	TOT	10.	KT	.621	KD	.169														
ORIENTATION	4	5	6	7	8	9	HOURLY SOLAR RADIATION														DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGD	
							11	12	13	14	15	16	17	18	19	20									
SOUTH	0.	0.	0.	0.	0.	22.	130.	196.	234.	246.	234.	196.	130.	22.	0.	0.	0.	0.	1410.	136.	237.	56.	93.		
SOUTHWEST	0.	0.	0.	0.	0.	3.	18.	74.	132.	181.	212.	215.	173.	35.	0.	0.	0.	0.	1044.	104.	179.	44.	36.		
WEST	0.	0.	0.	0.	0.	3.	12.	19.	24.	26.	81.	119.	121.	30.	0.	0.	0.	0.	435.	51.	82.	24.	19.		
NORTHWEST	0.	0.	0.	0.	0.	3.	12.	19.	24.	26.	24.	19.	12.	8.	0.	0.	0.	0.	149.	26.	37.	15.	36.		
NORTH	0.	0.	0.	0.	0.	3.	12.	19.	24.	26.	24.	19.	12.	3.	0.	0.	0.	0.	144.	26.	36.	15.	19.		
NORTHEAST	0.	0.	0.	0.	0.	8.	12.	19.	24.	26.	24.	19.	12.	3.	0.	0.	0.	0.	149.	26.	37.	15.	19.		
EAST	0.	0.	0.	0.	0.	30.	121.	119.	81.	26.	24.	19.	12.	3.	0.	0.	0.	0.	435.	51.	82.	24.	36.		
SOUTHEAST	0.	0.	0.	0.	0.	35.	173.	215.	212.	181.	132.	74.	18.	3.	0.	0.	0.	0.	1044.	104.	179.	44.	36.		
HORIZ.	0.	0.	0.	0.	0.	7.	46.	84.	109.	117.	109.	84.	46.	7.	0.	0.	0.	0.	606.	66.	109.	30.	46.		
MONTH	2	H0	1574.	TOD	17.	TOT	14.	KT	.678	KD	.155														
ORIENTATION	4	5	6	7	8	9	HOURLY SOLAR RADIATION														DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGD	
							11	12	13	14	15	16	17	18	19	20									
SOUTH	0.	0.	0.	0.	3.	91.	165.	217.	250.	261.	250.	217.	165.	91.	3.	0.	0.	0.	1714.	144.	248.	69.	114.		
SOUTHWEST	0.	0.	0.	0.	1.	11.	21.	75.	140.	195.	234.	249.	233.	167.	6.	0.	0.	0.	1332.	116.	196.	57.	92.		
WEST	0.	0.	0.	0.	1.	11.	21.	29.	34.	35.	100.	152.	177.	151.	6.	0.	0.	0.	718.	70.	114.	38.	56.		
NORTHWEST	0.	0.	0.	0.	1.	11.	21.	29.	34.	35.	34.	29.	30.	54.	4.	0.	0.	0.	282.	38.	55.	24.	31.		
NORTH	0.	0.	0.	0.	1.	11.	21.	29.	34.	35.	34.	29.	21.	11.	1.	0.	0.	0.	228.	34.	48.	22.	28.		
NORTHEAST	0.	0.	0.	0.	4.	54.	30.	29.	34.	35.	34.	29.	21.	11.	1.	0.	0.	0.	282.	38.	55.	24.	31.		
EAST	0.	0.	0.	0.	6.	151.	177.	152.	100.	35.	34.	29.	21.	11.	1.	0.	0.	0.	718.	70.	114.	38.	56.		
SOUTHEAST	0.	0.	0.	0.	6.	167.	233.	249.	234.	195.	140.	75.	21.	11.	1.	0.	0.	0.	1332.	116.	196.	57.	92.		
HORIZ.	0.	0.	0.	0.	3.	45.	96.	138.	164.	173.	164.	138.	96.	45.	3.	0.	0.	0.	1066.	96.	160.	49.	77.		
MONTH	3	H0	2286.	TOD	31.	TOT	28. <th>KT</th> <th>.672</th> <th>KD</th> <th>.156</th> <th colspan="14"></th>	KT	.672	KD	.156														
ORIENTATION	4	5	6	7	8	9	HOURLY SOLAR RADIATION														DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGD	
							11	12	13	14	15	16	17	18	19	20									
SOUTH	0.	0.	0.	0.	35.	95.	151.	195.	223.	233.	223.	195.	151.	95.	35.	0.	0.	0.	1632.	135.	220.	81.	123.		
SOUTHWEST	0.	0.	0.	0.	10.	21.	31.	63.	125.	178.	216.	236.	231.	197.	118.	0.	0.	0.	1424.	122.	196.	74.	111.		
WEST	0.	0.	0.	0.	10.	21.	31.	38.	43.	45.	108.	161.	193.	195.	137.	0.	0.	0.	983.	94.	145.	60.	86.		
NORTHWEST	0.	0.	0.	0.	10.	21.	31.	38.	43.	45.	43.	38.	61.	92.	82.	0.	0.	0.	504.	63.	90.	45.	58.		
NORTH	0.	0.	0.	0.	10.	21.	31.	38.	43.	45.	43.	38.	31.	21.	10.	0.	0.	0.	331.	52.	70.	39.	48.		
NORTHEAST	0.	0.	0.	0.	82.	92.	61.	38.	43.	45.	43.	38.	31.	21.	10.	0.	0.	0.	504.	63.	90.	45.	58.		
EAST	0.	0.	0.	0.	137.	195.	193.	161.	108.	45.	43.	38.	31.	21.	10.	0.	0.	0.	983.	94.	145.	60.	86.		
SOUTHEAST	0.	0.	0.	0.	118.	197.	231.	236.	216.	178.	125.	63.	31.	21.	10.	0.	0.	0.	1424.	122.	196.	74.	111.		
HORIZ.	0.	0.	0.	0.	36.	91.	142.	182.	208.	216.	208.	182.	142.	91.	36.	0.	0.	0.	1536.	129.	209.	78.	118.		

LOCATION GLASGOW, MONTANA LATITUDE 48 DEGREES 13 MINUTES

MONTH	4	HO	3043.	TOD	48.	TOT	44.	KT	.597	KD	.174	DAILY TOTAL RADIATION	SAG/DAYTIME SAT6S	DAYTIME SAT6S	SAG/ALL DAY SAT6S		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	8.	27.	70.	112.	145.	166.	174.	166.	145.	112.	70.	27.	8.	0.	0.
SOUTHWEST	0.	0.	8.	19.	30.	40.	48.	97.	138.	169.	185.	184.	163.	122.	55.	0.	0.
WEST	0.	0.	8.	19.	30.	40.	47.	52.	53.	103.	144.	171.	179.	157.	86.	0.	0.
NORTHWEST	0.	0.	8.	19.	30.	40.	47.	52.	53.	52.	47.	82.	107.	112.	71.	0.	0.
NORTH	0.	0.	19.	19.	30.	40.	47.	52.	53.	52.	47.	40.	30.	19.	19.	0.	0.
NORTHEAST	0.	0.	71.	112.	107.	82.	47.	52.	53.	52.	47.	40.	30.	19.	8.	0.	0.
EAST	0.	0.	86.	157.	179.	171.	144.	103.	53.	52.	47.	40.	30.	19.	8.	0.	0.
SOUTHEAST	0.	0.	55.	122.	163.	184.	185.	169.	138.	97.	48.	40.	30.	19.	8.	0.	0.
HORIZ.	0.	0.	24.	72.	121.	164.	197.	218.	226.	218.	197.	164.	121.	72.	24.	0.	0.
																149.	232.
																	103.
																	150.

MONTH	5	HO	3562.	TOD	59.	TOT	55.	KT	.611	KD	.171	HOURLY SOLAR RADIATION					DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	TIME SATGS	SAG/ALL DAY SATGS		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	5.	15.	25.	58.	97.	128.	149.	156.	149.	128.	97.	58.	25.	15.	5.	0.	1109.	119.	165.	93.	123.
SOUTHWEST	0.	5.	15.	25.	36.	45.	52.	86.	127.	157.	174.	174.	158.	125.	76.	16.	0.	1270.	128.	180.	99.	132.
WEST	0.	5.	15.	25.	36.	45.	52.	56.	58.	107.	148.	176.	186.	174.	129.	35.	0.	1245.	126.	178.	98.	131.
NORTHWEST	0.	5.	15.	25.	36.	45.	52.	56.	58.	56.	65.	101.	127.	136.	116.	36.	0.	927.	109.	147.	87.	111.
NORTH	0.	19.	43.	34.	36.	45.	52.	56.	58.	56.	52.	45.	36.	34.	43.	19.	0.	624.	93.	119.	77.	93.
NORTHEAST	0.	36.	116.	136.	127.	101.	65.	56.	58.	56.	52.	45.	36.	25.	15.	5.	0.	927.	109.	147.	87.	111.
EAST	0.	35.	129.	174.	186.	176.	148.	107.	58.	56.	52.	45.	36.	25.	15.	5.	0.	1245.	126.	178.	98.	131.
SOUTHEAST	0.	16.	76.	125.	158.	174.	174.	157.	127.	86.	52.	45.	36.	25.	15.	5.	0.	1270.	128.	180.	99.	132.
HORIZ.	0.	10.	51.	100.	148.	190.	222.	243.	250.	243.	222.	190.	148.	100.	51.	10.	0.	2177.	176.	266.	130.	187.

MONTH	6	HO	3759.	TOD	67.	TOT	64.	KT	.602	KD	.174	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	7.	17.	28.	52.	89.	118.	137.	144.	137.	118.	89.	52.	28.	17.	7.	0.
SOUTHWEST	0.	7.	17.	28.	38.	46.	53.	80.	119.	148.	164.	164.	150.	119.	76.	25.	0.
WEST	0.	7.	17.	28.	38.	46.	53.	57.	59.	105.	144.	171.	182.	172.	134.	58.	0.
NORTHWEST	0.	7.	17.	28.	38.	46.	53.	57.	59.	57.	72.	105.	130.	140.	124.	61.	0.
NORTH	0.	33.	51.	42.	38.	46.	53.	57.	59.	57.	53.	46.	38.	42.	51.	33.	0.
NORTHEAST	0.	61.	124.	140.	130.	105.	72.	57.	59.	57.	53.	46.	38.	28.	17.	7.	0.
EAST	0.	58.	134.	172.	182.	171.	144.	105.	59.	57.	53.	46.	38.	28.	17.	7.	0.
SOUTHEAST	0.	25.	76.	119.	150.	164.	164.	148.	119.	80.	53.	46.	38.	28.	17.	7.	0.
HORIZ.	0.	18.	60.	108.	154.	194.	226.	245.	252.	245.	226.	194.	154.	108.	60.	18.	0.



LOCATION GLASGOW, MONTANA LATITUDE 48 DEGREES 13 MINUTES

MONTH	7	H0	3563.	T00	76.	T0T	72.	HOURLY SOLAR RADIATION							KD	.158		
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
ORIENTATION		-----																
SOUTH	0.	4.	14.	25.	60.	104.	139.	162.	170.	162.	139.	104.	60.	25.	14.	4.	0.	
SOUTHWEST	0.	4.	14.	25.	35.	44.	51.	90.	137.	172.	192.	193.	175.	138.	83.	17.	0.	
WEST	0.	4.	14.	25.	35.	44.	51.	56.	57.	114.	162.	195.	208.	195.	144.	38.	0.	
NORTHWEST	0.	4.	14.	25.	35.	44.	51.	56.	57.	56.	67.	109.	140.	152.	128.	39.	0.	
NORTH	0.	20.	46.	35.	35.	44.	51.	56.	57.	56.	51.	44.	35.	35.	46.	20.	0.	
NORTHEAST	0.	39.	128.	152.	140.	109.	67.	56.	57.	56.	51.	44.	35.	25.	14.	4.	0.	
EAST	0.	38.	144.	195.	208.	195.	162.	114.	57.	56.	51.	44.	35.	25.	14.	4.	0.	
SOUTHEAST	0.	17.	83.	138.	175.	193.	192.	172.	137.	90.	51.	44.	35.	25.	14.	4.	0.	
HORIZ.	0.	10.	54.	108.	161.	207.	243.	266.	274.	266.	243.	207.	161.	108.	54.	10.	0.	

MONTH	8	H0	3023.	T00	73.	T0T	69.	KT	.630	KD	.167											
ORIENTATION	4	HOURLY SOLAR RADIATION																				
		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	8.	27.	72.	117.	153.	177.	185.	177.	153.	117.	72.	27.	8.	0.	0.	1294.	150.	209.	113.	147.
SOUTHWEST	0.	0.	8.	19.	30.	39.	47.	100.	146.	180.	197.	196.	173.	127.	55.	0.	0.	1318.	151.	211.	114.	149.
WEST	0.	0.	8.	19.	30.	39.	47.	51.	53.	108.	153.	182.	190.	165.	85.	0.	0.	1129.	140.	192.	108.	137.
NORTHWEST	0.	0.	8.	19.	30.	39.	47.	51.	53.	51.	47.	85.	113.	117.	70.	0.	0.	730.	117.	150.	94.	113.
NORTH	0.	0.	19.	19.	30.	39.	47.	51.	53.	51.	47.	39.	30.	19.	19.	0.	0.	464.	101.	122.	85.	97.
NORTHEAST	0.	0.	70.	117.	113.	85.	47.	51.	53.	51.	47.	39.	30.	19.	8.	0.	0.	730.	117.	150.	94.	113.
EAST	0.	0.	85.	165.	190.	182.	153.	108.	53.	51.	47.	39.	30.	19.	8.	0.	0.	1129.	140.	192.	108.	137.
SOUTHEAST	0.	0.	55.	127.	173.	196.	197.	180.	146.	100.	47.	39.	30.	19.	8.	0.	0.	1318.	151.	211.	114.	149.
HORIZ.	0.	0.	23.	73.	126.	172.	208.	231.	239.	231.	208.	172.	126.	73.	23.	0.	0.	1905.	186.	273.	134.	184.

MONTH	9	H0	2280.	TOD	61.	TOT	57.	KT	.629	KD	.167						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	30.	85.	137.	178.	203.	212.	203.	178.	137.	85.	30.	0.	0.	0.
SOUTHWEST	0.	0.	0.	10.	21.	31.	60.	115.	163.	198.	214.	208.	174.	100.	0.	0.	0.
WEST	0.	0.	0.	10.	21.	31.	38.	43.	45.	101.	147.	175.	173.	117.	0.	0.	0.
NORTHWEST	0.	0.	0.	10.	21.	31.	38.	43.	45.	43.	38.	58.	83.	71.	0.	0.	0.
NORTH	0.	0.	0.	10.	21.	31.	38.	43.	45.	43.	38.	31.	21.	10.	0.	0.	0.
NORTHEAST	0.	0.	0.	71.	83.	58.	38.	43.	45.	43.	38.	31.	21.	10.	0.	0.	0.
EAST	0.	0.	0.	117.	173.	175.	147.	101.	45.	43.	38.	31.	21.	10.	0.	0.	0.
SOUTHEAST	0.	0.	0.	100.	174.	208.	214.	198.	163.	115.	60.	31.	21.	10.	0.	0.	0.
HORIZ.	0.	0.	1.	33.	85.	133.	170.	194.	202.	194.	170.	133.	85.	33.	1.	0.	0.

DAILY TOTAL RADIATION	SAG/DAYTIME SATG	DAYTIME SATG	SAG/ALL DAY SATG
1189.	140.	189.	113.
1373.	150.	206.	119.
1345.	148.	204.	118.
980.	129.	169.	106.
633.	110.	136.	94.
980.	129.	169.	106.
1345.	148.	204.	118.
1373.	150.	206.	119.
2373.	203.	301.	153.

DAILY TOTAL RADIATION	SAG/DAYTIME SATG	DAYTIME SATG	SAG/ALL DAY SATG
1294.	150.	209.	113.
1318.	151.	211.	114.
1129.	140.	192.	108.
730.	117.	150.	94.
464.	101.	122.	85.
730.	117.	150.	94.
1129.	140.	192.	108.
1318.	151.	211.	114.
1905.	186.	273.	134.

DAILY TOTAL RADIATION	SAG/DAYTIME SATG	DAYTIME SATG	SAG/ALL DAY SATG
1480.	165.	239.	108.
1294.	149.	216.	101.
902.	122.	169.	88.
483.	94.	119.	74.
333.	84.	101.	69.
483.	94.	119.	74.
902.	122.	169.	88.
1294.	149.	216.	101.
1434.	159.	233.	106.

LOCATION	GLASGOW, MONTANA	LATITUDE	48 DEGREES	13 MINUTES
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MONTH	10	ORIENTATION	H0	1541.	TOD	49.	TOT	45.	HOURLY SOLAR RADIATION										KD	.175	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY
									6	7	8	9	10	11	12	13	14	15				16	17	
			0.	0.	0.	2.	72.	134.	179.	207.	216.	207.	179.	134.	72.	2.	0.	0.	1403.	153.	239.	91.	127.	
		SOUTH	0.	0.	0.	1.	11.	21.	66.	119.	163.	194.	204.	187.	128.	3.	0.	0.	1097.	131.	197.	81.	109.	
		SOUTHWEST	0.	0.	0.	1.	11.	21.	29.	33.	35.	86.	126.	143.	116.	3.	0.	0.	605.	94.	131.	65.	81.	
		WEST	0.	0.	0.	1.	11.	21.	29.	33.	35.	33.	29.	27.	42.	2.	0.	0.	264.	69.	85.	54.	61.	
		NORTHWEST	0.	0.	0.	1.	11.	21.	29.	33.	35.	33.	29.	21.	11.	1.	0.	0.	226.	66.	80.	53.	59.	
		NORTH	0.	0.	0.	1.	11.	21.	29.	33.	35.	33.	29.	21.	11.	1.	0.	0.	264.	69.	85.	54.	61.	
		NORTHEAST	0.	0.	0.	2.	42.	27.	29.	33.	35.	33.	29.	21.	11.	1.	0.	0.	605.	94.	131.	65.	81.	
		EAST	0.	0.	0.	3.	116.	143.	126.	86.	35.	33.	29.	21.	11.	1.	0.	0.	1097.	131.	197.	81.	109.	
		SOUTHEAST	0.	0.	0.	3.	128.	187.	204.	194.	163.	119.	66.	21.	11.	1.	0.	0.	913.	117.	172.	75.	99.	
		ORIZ.	0.	0.	0.	2.	35.	82.	118.	141.	149.	141.	118.	82.	38.	2.	0.	0.						

MONTH	11	4	H0	967.	T00	31.	TOT	28.	KT	KD	.186										
ORIENTATION																					
HOURLY SOLAR RADIATION																					
							11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	0.	0.	0.	15.	97.	177.	186.	177.	148.	97.	15.	0.	0.	0.	1058.	124.	199.	62.	90.
SOUTHWEST	0.	0.	0.	0.	0.	3.	17.	59.	103.	139.	161.	127.	23.	0.	0.	0.	792.	100.	157.	53.	74.
WEST	0.	0.	0.	0.	0.	3.	12.	19.	24.	25.	65.	91.	90.	0.	0.	0.	348.	61.	86.	39.	48.
NORTHWEST	0.	0.	0.	0.	0.	3.	12.	19.	24.	25.	24.	19.	12.	6.	0.	0.	144.	44.	54.	33.	36.
NORTH	0.	0.	0.	0.	0.	3.	12.	19.	24.	25.	24.	19.	12.	3.	0.	0.	140.	43.	53.	32.	36.
NORTHEAST	0.	0.	0.	0.	0.	6.	12.	19.	24.	25.	24.	19.	12.	3.	0.	0.	144.	44.	54.	33.	36.
EAST	0.	0.	0.	0.	0.	20.	90.	91.	65.	25.	24.	19.	12.	3.	0.	0.	348.	61.	86.	39.	48.
SOUTHEAST	0.	0.	0.	0.	0.	23.	127.	161.	139.	103.	59.	17.	3.	0.	0.	0.	792.	100.	157.	53.	74.
SORIZ.	0.	0.	0.	0.	0.	6.	36.	69.	89.	96.	89.	69.	38.	6.	0.	0.	499.	75.	110.	44.	57.

MONTH	12	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGD
ORIENTATION																					
SOUTH																					
SOUTHWEST																					
WEST																					
NORTHWEST																					
NORTH																					
NORTHEAST																					
EAST																					
SOUTHEAST																					
SOLIZ.																					

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	136.	144.	135.	116.	119.	121.	140.	150.	162.	153.	124.	123.	135.
SOUTHWEST	104.	116.	122.	118.	128.	131.	150.	151.	149.	131.	100.	95.	125.
WEST	51.	70.	94.	108.	126.	133.	148.	140.	122.	94.	47.	47.	100.
NORTHWEST	26.	38.	63.	88.	109.	119.	129.	117.	94.	69.	44.	29.	77.
NORTH	26.	34.	52.	74.	93.	103.	110.	101.	84.	66.	43.	29.	68.
NORTHEAST	26.	36.	63.	88.	109.	119.	129.	117.	94.	69.	44.	29.	77.
EAST	51.	70.	94.	108.	126.	133.	148.	140.	122.	94.	61.	47.	100.
SOUTHEAST	104.	116.	122.	118.	128.	131.	150.	151.	149.	131.	100.	95.	125.
HORIZ.	66.	96.	129.	149.	176.	184.	203.	186.	159.	117.	75.	58.	133.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	237.	248.	220.	172.	165.	162.	189.	209.	239.	239.	199.	207.	207.
SOUTHWEST	179.	196.	196.	175.	180.	180.	206.	211.	216.	197.	157.	158.	188.
WEST	82.	114.	145.	158.	178.	184.	204.	192.	169.	131.	86.	71.	143.
NORTHWEST	37.	55.	90.	121.	147.	158.	169.	150.	119.	85.	54.	38.	102.
NORTH	36.	48.	70.	95.	119.	131.	136.	122.	101.	80.	53.	38.	86.
NORTHEAST	37.	55.	90.	121.	147.	158.	169.	150.	119.	85.	54.	38.	102.
EAST	82.	114.	145.	158.	178.	184.	204.	192.	169.	131.	86.	71.	143.
SOUTHEAST	179.	196.	196.	175.	180.	180.	206.	211.	216.	197.	157.	158.	188.
HORIZ.	109.	160.	209.	232.	266.	274.	301.	273.	233.	172.	110.	90.	203.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	56.	69.	81.	84.	93.	99.	113.	113.	108.	91.	62.	51.	85.
SOUTHWEST	44.	57.	74.	85.	99.	106.	119.	114.	101.	81.	53.	42.	81.
WEST	24.	38.	60.	79.	98.	107.	118.	108.	88.	65.	39.	25.	71.
NORTHWEST	15.	24.	45.	68.	87.	98.	106.	94.	74.	54.	33.	19.	60.
NORTH	15.	22.	39.	59.	77.	88.	94.	85.	69.	53.	32.	19.	54.
NORTHEAST	15.	24.	45.	68.	87.	98.	106.	94.	74.	54.	33.	19.	60.
EAST	24.	38.	60.	79.	98.	107.	118.	108.	88.	65.	39.	25.	71.
SOUTHEAST	44.	57.	74.	85.	99.	106.	119.	114.	101.	81.	53.	42.	81.
HORIZ.	30.	49.	78.	103.	130.	141.	153.	134.	106.	75.	44.	29.	89.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	93.	114.	123.	116.	123.	126.	144.	147.	147.	127.	90.	80.	119.
SOUTHWEST	71.	92.	111.	118.	132.	138.	155.	149.	135.	109.	74.	63.	112.
WEST	36.	56.	86.	108.	131.	140.	153.	137.	112.	81.	48.	33.	93.
NORTHWEST	19.	31.	58.	86.	111.	124.	131.	113.	86.	61.	36.	22.	73.
NORTH	19.	28.	48.	72.	93.	106.	110.	97.	77.	59.	36.	22.	64.
NORTHEAST	19.	31.	58.	86.	111.	124.	131.	113.	86.	61.	36.	22.	73.
EAST	36.	56.	86.	108.	131.	140.	153.	137.	112.	81.	48.	33.	93.
SOUTHEAST	71.	92.	111.	118.	132.	138.	155.	149.	135.	109.	74.	63.	112.
HORIZ.	46.	77.	118.	150.	187.	200.	216.	184.	144.	99.	57.	40.	126.

LOCATION		GRAND JUNCTION, COLO.		LATITUDE		39 DEGREES		7 MINUTES															
MONTH	1	HO	1478.	TOD	27.	TOT	24.	KT	.597	KD	.174												
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
		HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION					SAG/DAYTIME SAGS SATGD		SAG/ALL DAY SATGD		
SOUTH	0.	0.	0.	0.	0.	71.	140.	185.	211.	220.	211.	185.	140.	71.	0.	0.	0.	0.	1433.	140.	233.	70.	107.
SOUTHWEST	0.	0.	0.	0.	0.	9.	22.	72.	123.	166.	195.	206.	188.	116.	0.	0.	0.	0.	1096.	114.	185.	59.	88.
WEST	0.	0.	0.	0.	0.	9.	20.	28.	34.	36.	45.	123.	137.	99.	0.	0.	0.	0.	570.	72.	109.	42.	57.
NORTHWEST	0.	0.	0.	0.	0.	9.	20.	28.	34.	36.	34.	28.	20.	29.	0.	0.	0.	0.	237.	46.	61.	32.	38.
NORTH	0.	0.	0.	0.	0.	9.	20.	28.	34.	36.	34.	28.	20.	9.	0.	0.	0.	0.	217.	44.	58.	31.	37.
NORTHEAST	0.	0.	0.	0.	0.	29.	20.	28.	34.	36.	34.	28.	20.	9.	0.	0.	0.	0.	237.	46.	61.	32.	38.
EAST	0.	0.	0.	0.	0.	99.	137.	123.	85.	36.	34.	28.	20.	9.	0.	0.	0.	0.	570.	72.	109.	42.	57.
SOUTHEAST	0.	0.	0.	0.	0.	116.	188.	206.	195.	166.	123.	72.	22.	9.	0.	0.	0.	0.	1096.	114.	185.	59.	88.
HORIZ.	0.	0.	0.	0.	0.	29.	77.	117.	143.	152.	143.	117.	77.	29.	0.	0.	0.	0.	883.	97.	154.	52.	75.

MONTH	2	HO	2039.	TOD	35.	TOT	32.	KT	.633	KD	.166												
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
		HOURLY SOLAR RADIATION														DAILY TOTAL RADIATION					SAG/DAYTIME SAGS SATGD		SAG/ALL DAY SATGD
SOUTH	0.	0.	0.	0.	0.	19.	92.	147.	187.	212.	220.	212.	187.	147.	92.	19.	0.	0.	1537.	144.	233.	81.	122.
SOUTHWEST	0.	0.	0.	0.	0.	4.	16.	28.	66.	121.	169.	203.	220.	213.	172.	49.	0.	0.	1262.	125.	198.	72.	106.
WEST	0.	0.	0.	0.	0.	4.	16.	28.	37.	42.	44.	101.	146.	171.	160.	52.	0.	0.	801.	92.	138.	58.	79.
NORTHWEST	0.	0.	0.	0.	0.	4.	16.	28.	37.	42.	44.	42.	37.	45.	64.	27.	0.	0.	386.	62.	85.	44.	55.
NORTH	0.	0.	0.	0.	0.	4.	16.	28.	37.	42.	44.	42.	37.	28.	16.	4.	0.	0.	299.	56.	73.	42.	49.
NORTHEAST	0.	0.	0.	0.	0.	27.	64.	45.	37.	42.	44.	42.	37.	28.	16.	4.	0.	0.	386.	62.	85.	44.	55.
EAST	0.	0.	0.	0.	0.	52.	160.	171.	146.	101.	44.	42.	37.	28.	16.	4.	0.	0.	801.	92.	138.	58.	79.
SOUTHEAST	0.	0.	0.	0.	0.	49.	172.	213.	220.	203.	169.	121.	66.	28.	16.	4.	0.	0.	1262.	125.	198.	72.	106.
HORIZ.	0.	0.	0.	0.	0.	10.	65.	119.	162.	189.	199.	189.	162.	119.	65.	10.	0.	0.	1290.	127.	201.	73.	107.

MONTH	3	HO	2655.	TOD	45.	TOT	41.	KT	.643	KD	.163												
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
		HOURLY SOLAR RADIATION														DAILY TOTAL RADIATION					SAG/DAYTIME SAGS SATGD		SAG/ALL DAY SATGD
SOUTH	0.	0.	0.	0.	0.	33.	84.	131.	167.	190.	198.	190.	167.	131.	84.	33.	0.	0.	1406.	135.	208.	86.	123.
SOUTHWEST	0.	0.	0.	0.	0.	12.	25.	36.	51.	107.	155.	191.	211.	210.	183.	117.	0.	0.	1298.	128.	195.	83.	117.
WEST	0.	0.	0.	0.	0.	12.	25.	36.	45.	50.	52.	110.	158.	187.	190.	140.	0.	0.	1004.	109.	161.	73.	100.
NORTHWEST	0.	0.	0.	0.	0.	12.	25.	36.	45.	50.	52.	50.	45.	76.	99.	87.	0.	0.	577.	82.	112.	60.	75.
NORTH	0.	0.	0.	0.	0.	12.	25.	36.	45.	50.	52.	50.	45.	36.	25.	12.	0.	0.	386.	69.	89.	54.	64.
NORTHEAST	0.	0.	0.	0.	0.	87.	99.	76.	45.	50.	52.	50.	45.	36.	25.	12.	0.	0.	577.	82.	112.	60.	75.
EAST	0.	0.	0.	0.	0.	140.	190.	187.	158.	110.	52.	50.	45.	36.	25.	12.	0.	0.	1004.	109.	161.	73.	100.
SOUTHEAST	0.	0.	0.	0.	0.	117.	183.	210.	211.	191.	155.	107.	51.	36.	25.	12.	0.	0.	1298.	128.	195.	83.	117.
HORIZ.	0.	0.	0.	0.	0.	42.	103.	158.	201.	229.	238.	229.	201.	158.	103.	42.	0.	0.	1706.	154.	243.	96.	141.



LOCATION	GRAND JUNCTION, COLO.	LATITUDE	39 DEGREES	7 MINUTES
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MONTH	4	H0	3253.	T00	56.	T0T	52.	KT	.632	KD	.166.						
ORIENTATION																	
HOURLY SOLAR RADIATION																	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	7.	19.	60.	100.	133.	153.	160.	153.	133.	100.	60.	19.	7.	0.	0.
SOUTHWEST	0.	0.	7.	19.	32.	43.	51.	85.	130.	164.	184.	185.	167.	124.	46.	0.	0.
WEST	0.	0.	7.	19.	32.	43.	51.	57.	58.	113.	157.	187.	194.	168.	74.	0.	0.
NORTHWEST	0.	0.	7.	19.	32.	43.	51.	57.	58.	57.	69.	104.	127.	124.	62.	0.	0.
NORTH	0.	0.	18.	19.	32.	43.	51.	57.	58.	57.	51.	43.	32.	19.	18.	0.	0.
NORTHEAST	0.	0.	62.	124.	127.	104.	69.	57.	58.	57.	51.	43.	32.	19.	7.	0.	0.
EAST	0.	0.	74.	168.	194.	187.	157.	113.	58.	57.	51.	43.	32.	19.	7.	0.	0.
SOUTHEAST	0.	0.	46.	124.	167.	185.	184.	164.	130.	85.	51.	43.	32.	19.	7.	0.	0.
HORIZ.	0.	0.	18.	75.	135.	187.	228.	254.	263.	254.	228.	187.	135.	75.	18.	0.	0.
DAILY TOTAL RADIATION												1105.	120.	172.	87.	116.	
SAG/DAYTIME SAT6S SAT6D												1239.	127.	186.	92.	124.	
SAG/ALL DAY SAT6S SAT6D												1160.	123.	178.	89.	119.	
SAG/ALL DAY SAT6S SAT6D												810.	103.	141.	78.	81.	
SAG/ALL DAY SAT6S SAT6D												498.	85.	108.	68.	81.	
SAG/ALL DAY SAT6S SAT6D												810.	103.	141.	78.	81.	
SAG/ALL DAY SAT6S SAT6D												1160.	123.	178.	89.	119.	
SAG/ALL DAY SAT6S SAT6D												1239.	127.	186.	92.	124.	
SAG/ALL DAY SAT6S SAT6D												2057.	175.	272.	118.	172.	

MONTH	5	H0	3626.	T00	66.	TOT	62.	KT	.643	KD	.163						
ORIENTATION																	
HOURLY SOLAR RADIATION																	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SOUTH	0.	1.	12.	24.	42.	79.	109.	128.	135.	128.	109.	79.	42.	24.	12.	1.	0.
SOUTHWEST	0.	1.	12.	24.	36.	47.	55.	69.	113.	147.	166.	169.	154.	120.	65.	1.	0.
WEST	0.	1.	12.	24.	36.	47.	55.	60.	61.	114.	158.	188.	198.	180.	118.	2.	0.
NORTHWEST	0.	1.	12.	24.	36.	47.	55.	60.	61.	60.	90.	124.	147.	148.	109.	2.	0.
NORTH	0.	1.	42.	44.	36.	47.	55.	60.	61.	60.	55.	47.	36.	44.	12.	1.	0.
NORTHEAST	0.	2.	109.	148.	147.	124.	90.	60.	61.	60.	55.	47.	36.	24.	12.	1.	0.
EAST	0.	2.	118.	180.	198.	188.	158.	114.	61.	60.	55.	47.	36.	24.	12.	1.	0.
SOUTHEAST	0.	1.	65.	120.	154.	169.	166.	147.	113.	69.	55.	47.	36.	24.	12.	1.	0.
ORIZ.	0.	2.	40.	99.	157.	208.	247.	272.	281.	272.	247.	208.	157.	99.	40.	2.	0.
DAILY TOTAL RADIATION												922.	SAG/DAYTIME SAG/ALL DAY				
SATGS												119.	160.	94.	118.		
SATGS												134.	186.	102.	133.		
SATGS												138.	193.	105.	138.		
SATGS												974.	122.	165.	95.	121.	
SATGS												630.	102.	130.	84.	100.	
SATGS												974.	122.	165.	9.	121.	
SATGS												1254.	138.	193.	105.	138.	
SATGS												1180.	134.	186.	102.	133.	
SATGS												2331.	200.	302.	142.	203.	

[illegible]

LOCATION	GRAND JUNCTION, COLO.				LATITUDE				39 DEGREES				7 MINUTES																			
MONTH	7	HO	3622.	TOD	82.	TOT	78.	KT	.690	KD	.152																					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME				SAG/ALL DAY									
	HOURLY SOLAR RADIATION																SATGS		SATGD	SATGS	SATGD	SATGS	SATGD									
	SOUTH	0.	1.	11.	24.	41.	81.	114.	135.	143.	135.	114.	81.	41.	24.	11.	1.		0.	959.	137.	179.	111.	136.								
	SOUTHWEST	0.	1.	11.	24.	36.	46.	54.	70.	119.	156.	179.	183.	167.	130.	70.	1.		0.	1247.	154.	208.	121.	154.								
	WEST	0.	1.	11.	24.	36.	46.	54.	59.	61.	121.	171.	204.	216.	196.	127.	2.		0.	1330.	159.	217.	124.	159.								
	NORTHWEST	0.	1.	11.	24.	36.	46.	54.	59.	61.	59.	94.	133.	159.	162.	117.	2.		0.	1019.	141.	185.	113.	140.								
	NORTH	0.	1.	45.	46.	36.	46.	54.	59.	61.	59.	54.	46.	36.	46.	45.	1.		0.	637.	119.	147.	100.	117.								
	NORTHEAST	0.	2.	117.	162.	159.	133.	94.	59.	61.	59.	54.	46.	36.	24.	11.	1.		0.	1019.	141.	185.	113.	140.								
	EAST	0.	2.	127.	196.	216.	204.	171.	121.	61.	59.	54.	46.	36.	24.	11.	1.		0.	1330.	159.	217.	124.	159.								
	SOUTHEAST	0.	1.	70.	130.	167.	183.	179.	156.	119.	70.	54.	46.	36.	24.	11.	1.		0.	1247.	154.	208.	121.	154.								
HORIZ.	0.	2.	42.	104.	168.	223.	266.	293.	303.	293.	266.	223.	168.	104.	42.	2.	0.	2500.	225.	335.	164.	229.										
MONTH	8	HO	3229.	TOD	80.	TOT	76.	KT	.650	KD	.162																					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME				SAG/ALL DAY									
	HOURLY SOLAR RADIATION																SATGS		SATGD	SATGS	SATGD	SATGS	SATGD									
	SOUTH	0.	0.	6.	19.	60.	102.	135.	157.	144.	157.	135.	102.	60.	19.	6.	0.		0.	1124.	149.	202.	114.	143.								
	SOUTHWEST	0.	0.	6.	19.	32.	42.	51.	86.	133.	169.	189.	190.	170.	125.	43.	0.		0.	1255.	157.	216.	119.	151.								
	WEST	0.	0.	6.	19.	32.	42.	51.	56.	58.	115.	162.	192.	199.	169.	69.	0.		0.	1169.	152.	207.	116.	146.								
	NORTHWEST	0.	0.	6.	19.	32.	42.	51.	56.	58.	56.	70.	106.	129.	125.	58.	0.		0.	809.	129.	168.	103.	124.								
	NORTH	0.	0.	17.	19.	32.	42.	51.	56.	58.	56.	51.	42.	32.	19.	17.	0.		0.	492.	110.	133.	92.	105.								
	NORTHEAST	0.	0.	58.	125.	129.	106.	70.	56.	58.	56.	51.	42.	32.	19.	6.	0.		0.	809.	129.	168.	103.	124.								
	EAST	0.	0.	69.	169.	199.	192.	162.	115.	58.	56.	51.	42.	32.	19.	6.	0.		0.	1169.	152.	207.	116.	146.								
	SOUTHEAST	0.	0.	43.	125.	170.	190.	189.	169.	133.	86.	51.	42.	32.	19.	6.	0.		0.	1255.	157.	216.	119.	151.								
HORIZ.	0.	0.	18.	75.	137.	191.	234.	261.	270.	261.	234.	191.	137.	75.	18.	0.	0.	2100.	209.	308.	147.	202.										
MONTH	9	HO	2642.	TOD	71.	TOT	67.	KT	.705	KD	.147																					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME				SAG/ALL DAY									
	HOURLY SOLAR RADIATION																SATGS		SATGD	SATGS	SATGD	SATGS	SATGD									
	SOUTH	0.	0.	0.	33.	90.	143.	184.	211.	220.	211.	184.	143.	90.	33.	0.	0.		0.	1544.	176.	257.	120.	161.								
	SOUTHWEST	0.	0.	0.	11.	24.	35.	51.	114.	170.	213.	236.	235.	203.	126.	0.	0.		0.	1418.	168.	242.	116.	153.								
	WEST	0.	0.	0.	11.	24.	35.	44.	50.	51.	119.	175.	209.	211.	151.	0.	0.		0.	1080.	145.	201.	104.	133.								
	NORTHWEST	0.	0.	0.	11.	24.	35.	44.	50.	51.	50.	44.	82.	109.	94.	0.	0.		0.	594.	112.	143.	88.	103.								
	NORTH	0.	0.	0.	11.	24.	35.	44.	50.	51.	50.	44.	35.	24.	11.	0.	0.		0.	379.	97.	117.	80.	90.								
	NORTHEAST	0.	0.	0.	94.	109.	82.	44.	50.	51.	50.	44.	35.	24.	11.	0.	0.		0.	594.	112.	143.	88.	103.								
	EAST	0.	0.	0.	151.	211.	209.	175.	119.	51.	50.	44.	35.	24.	11.	0.	0.		0.	1080.	145.	201.	104.	133.								
	SOUTHEAST	0.	0.	0.	125.	203.	235.	236.	213.	170.	114.	51.	35.	24.	11.	0.	0.		0.	1418.	168.	242.	116.	153.								
HORIZ.	0.	0.	0.	43.	111.	173.	221.	252.	262.	252.	221.	173.	111.	43.	0.	0.	0.	1862.	198.	295.	131.	180.										

LOCATION GRAND JUNCTION, COLO. LATITUDE 39 DEGRFES 7 MINUTES

MONTH	10	HO	2005.	TOD	58.	TOT	54.	HOURLY SOLAR RADIATION						KT	654	KD	.161						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME		SAG/ALL DAY	
																		SAT6S	SAT6D	SAT6S	SAT6D	SAT6S	SAT6D
SOUTH	0.	0.	0.	16.	94.	152.	195.	222.	231.	222.	195.	152.	94.	16.	0.	0.	0.	1590.	172.	254.	105.	147.	
SOUTHWEST	0.	0.	0.	4.	16.	27.	68.	126.	176.	213.	230.	221.	174.	41.	0.	0.	0.	1294.	150.	226.	96.	130.	
WEST	0.	0.	0.	4.	16.	27.	36.	42.	44.	103.	151.	176.	161.	43.	0.	0.	0.	803.	115.	162.	80.	101.	
NORTHWEST	0.	0.	0.	4.	16.	27.	36.	42.	44.	42.	36.	44.	64.	23.	0.	0.	0.	376.	85.	107.	66.	76.	
NORTH	0.	0.	0.	4.	16.	27.	36.	42.	44.	42.	36.	27.	16.	4.	0.	0.	0.	292.	79.	96.	64.	71.	
NORTHEAST	0.	0.	0.	23.	64.	44.	36.	42.	44.	42.	36.	27.	16.	4.	0.	0.	0.	376.	85.	107.	66.	76.	
EAST	0.	0.	0.	43.	161.	176.	151.	103.	44.	42.	36.	27.	16.	4.	0.	0.	0.	803.	115.	162.	80.	101.	
SOUTHEAST	0.	0.	0.	41.	174.	221.	230.	213.	176.	126.	68.	27.	16.	4.	0.	0.	0.	1294.	150.	226.	96.	130.	
HORIZ.	0.	0.	0.	9.	64.	121.	166.	194.	204.	194.	166.	121.	64.	9.	0.	0.	0.	1311.	152.	228.	96.	131.	

DAILY TOTAL RADIATION	1590.
SAG/DAYTIME SATGS	172.
SATGS SATGD	264.
SAG/ALL DAY SATGS	105.
SATGD	147.
SAG/DAYTIME SATGS	150.
SATGS SATGD	226.
SAG/ALL DAY SATGS	96.
SATGD	130.
SAG/DAYTIME SATGS	115.
SATGS SATGD	162.
SAG/ALL DAY SATGS	80.
SATGD	101.
SAG/DAYTIME SATGS	85.
SATGS SATGD	107.
SAG/ALL DAY SATGS	66.
SATGD	76.
SAG/DAYTIME SATGS	79.
SATGS SATGD	96.
SAG/ALL DAY SATGS	64.
SATGD	71.
SAG/DAYTIME SATGS	85.
SATGS SATGD	107.
SAG/ALL DAY SATGS	66.
SATGD	76.
SAG/DAYTIME SATGS	115.
SATGS SATGD	162.
SAG/ALL DAY SATGS	80.
SATGD	101.
SAG/DAYTIME SATGS	150.
SATGS SATGD	226.
SAG/ALL DAY SATGS	96.
SATGD	130.
SAG/DAYTIME SATGS	152.
SATGS SATGD	228.
SAG/ALL DAY SATGS	96.
SATGD	131.

MONTH 11	HO	1466.	TOD	42.	TOT	39.	KT	590	KD	.175
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ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	67.	137.	181.	208.	216.	208.	181.	137.	67.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	9.	22.	71.	121.	163.	192.	202.	183.	110.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	9.	19.	28.	34.	35.	84.	121.	134.	93.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	9.	19.	28.	34.	35.	34.	28.	19.	27.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	9.	19.	28.	34.	35.	34.	28.	19.	9.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	27.	19.	28.	34.	35.	34.	28.	19.	9.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	93.	134.	121.	84.	35.	34.	28.	19.	9.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	110.	183.	202.	192.	163.	121.	71.	22.	9.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	27.	75.	115.	141.	149.	141.	115.	75.	27.	0.	0.	0.	0.

DAILY TOTAL RADIATION	1402.
SAG/DAYTIME SATGS	153.
SATGS SATGD	244.
SAG/ALL DAY SATGS	84.
SATGD	120.
SAG/DAYTIME SATGS	127.
SATGS SATGD	197.
SAG/ALL DAY SATGS	73.
SATGD	101.
SAG/DAYTIME SATGS	86.
SATGS SATGD	122.
SAG/ALL DAY SATGS	56.
SATGD	71.
SAG/DAYTIME SATGS	61.
SATGS SATGD	76.
SAG/ALL DAY SATGS	46.
SATGD	52.
SAG/DAYTIME SATGS	59.
SATGS SATGD	73.
SAG/ALL DAY SATGS	45.
SATGD	51.
SAG/DAYTIME SATGS	61.
SATGS SATGD	76.
SAG/ALL DAY SATGS	46.
SATGD	52.
SAG/DAYTIME SATGS	86.
SATGS SATGD	122.
SAG/ALL DAY SATGS	56.
SATGD	71.
SAG/DAYTIME SATGS	127.
SATGS SATGD	197.
SAG/ALL DAY SATGS	73.
SATGD	101.
SAG/DAYTIME SATGS	111.
SATGS SATGD	167.
SAG/ALL DAY SATGS	66.
SATGD	89.

MONTH 12	HO	1263.	TOD	31.	TOT	28.	KT	621	KD	.169
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ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	55.	146.	199.	229.	238.	229.	199.	146.	55.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	6.	25.	78.	132.	178.	209.	217.	190.	86.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	6.	16.	25.	30.	32.	84.	123.	133.	71.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	6.	16.	25.	30.	32.	30.	25.	16.	17.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	6.	16.	25.	30.	32.	30.	25.	16.	6.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	17.	16.	25.	30.	32.	30.	25.	16.	6.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	71.	133.	123.	84.	32.	30.	25.	16.	6.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	86.	190.	217.	209.	178.	132.	78.	25.	16.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	17.	65.	107.	133.	143.	133.	107.	65.	17.	0.	0.	0.	0.

DAILY TOTAL RADIATION	1493.
SAG/DAYTIME SATGS	156.
SATGS SATGD	257.
SAG/ALL DAY SATGS	76.
SATGD	115.
SAG/DAYTIME SATGS	125.
SATGS SATGD	201.
SAG/ALL DAY SATGS	64.
SATGD	94.
SAG/DAYTIME SATGS	75.
SATGS SATGD	110.
SAG/ALL DAY SATGS	45.
SATGD	59.
SAG/DAYTIME SATGS	48.
SATGS SATGD	61.
SAG/ALL DAY SATGS	35.
SATGD	40.
SAG/DAYTIME SATGS	47.
SATGS SATGD	59.
SAG/ALL DAY SATGS	34.
SATGD	39.
SAG/DAYTIME SATGS	48.
SATGS SATGD	61.
SAG/ALL DAY SATGS	35.
SATGD	40.
SAG/DAYTIME SATGS	75.
SATGS SATGD	110.
SAG/ALL DAY SATGS	45.
SATGD	59.
SAG/DAYTIME SATGS	125.
SATGS SATGD	201.
SAG/ALL DAY SATGS	64.
SATGD	94.
SAG/DAYTIME SATGS	97.
SATGS SATGD	150.
SAG/ALL DAY SATGS	54.
SATGD	74.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	140.	144.	135.	120.	119.	125.	137.	140.	176.	172.	153.	156.	144.
SOUTHWEST	114.	125.	128.	127.	134.	144.	154.	157.	168.	150.	127.	125.	138.
WEST	72.	92.	109.	123.	138.	153.	159.	152.	145.	115.	86.	75.	118.
NORTHWEST	46.	62.	82.	103.	122.	137.	141.	129.	112.	85.	48.	48.	94.
NORTH	44.	56.	69.	85.	102.	116.	119.	110.	97.	79.	59.	47.	82.
NORTHEAST	46.	62.	82.	103.	122.	137.	141.	129.	112.	85.	61.	48.	94.
EAST	72.	92.	109.	123.	138.	153.	159.	152.	145.	115.	86.	75.	118.
SOUTHEAST	114.	125.	128.	127.	134.	144.	154.	157.	168.	150.	127.	125.	138.
HORIZ.	97.	127.	154.	175.	200.	223.	225.	200.	198.	152.	111.	97.	164.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	233.	233.	208.	172.	160.	163.	179.	202.	257.	264.	244.	257.	214.
SOUTHWEST	185.	198.	195.	186.	186.	197.	208.	216.	242.	226.	197.	201.	203.
WEST	109.	138.	161.	178.	193.	212.	217.	207.	201.	162.	122.	110.	168.
NORTHWEST	61.	85.	112.	141.	165.	185.	185.	143.	107.	76.	61.	61.	124.
NORTH	58.	73.	89.	108.	130.	146.	147.	133.	117.	96.	73.	59.	103.
NORTHEAST	61.	85.	112.	141.	165.	185.	185.	168.	143.	107.	76.	61.	124.
EAST	109.	138.	161.	178.	193.	212.	217.	207.	201.	162.	122.	110.	168.
SOUTHEAST	185.	198.	195.	186.	186.	197.	208.	216.	242.	226.	197.	201.	203.
HORIZ.	154.	201.	243.	272.	302.	336.	335.	308.	295.	228.	167.	150.	249.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	70.	81.	86.	87.	94.	102.	111.	114.	120.	105.	84.	76.	94.
SOUTHWEST	59.	72.	83.	92.	102.	113.	121.	119.	116.	96.	73.	64.	93.
WEST	42.	58.	73.	89.	105.	119.	124.	116.	104.	80.	56.	45.	84.
NORTHWEST	32.	44.	60.	78.	95.	109.	113.	103.	88.	66.	46.	35.	72.
NORTH	31.	42.	54.	68.	84.	96.	100.	92.	80.	64.	45.	34.	66.
NORTHEAST	32.	44.	60.	78.	95.	109.	113.	103.	88.	66.	46.	35.	72.
EAST	42.	58.	73.	89.	105.	119.	124.	116.	104.	80.	56.	45.	84.
SOUTHEAST	59.	72.	83.	92.	102.	113.	121.	119.	116.	96.	73.	64.	93.
HORIZ.	52.	73.	96.	118.	142.	162.	164.	147.	131.	96.	66.	54.	108.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	107.	122.	123.	116.	118.	125.	136.	143.	161.	147.	120.	115.	128.
SOUTHWEST	88.	106.	117.	124.	133.	146.	154.	151.	153.	130.	101.	94.	125.
WEST	57.	79.	100.	119.	138.	155.	159.	146.	133.	101.	71.	59.	110.
NORTHWEST	38.	55.	75.	99.	121.	138.	140.	124.	103.	76.	52.	40.	88.
NORTH	37.	49.	64.	81.	100.	115.	117.	105.	90.	71.	51.	39.	77.
NORTHEAST	38.	55.	75.	99.	121.	138.	140.	124.	103.	76.	52.	40.	88.
EAST	57.	79.	100.	119.	138.	155.	159.	146.	133.	101.	71.	59.	110.
SOUTHEAST	88.	106.	117.	124.	133.	146.	154.	151.	153.	130.	101.	94.	125.
HORIZ.	75.	107.	141.	172.	207.	231.	229.	202.	180.	131.	89.	74.	153.



LOCATION	GRAND LAKE, COLORADO	LATITUDE	40 DEGREES	15 MINUTES																				
MONTH	1	HO	1416.	TOD	18.	TOT	17.	KT	.541	KD	.182													
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD		
SOUTH	0.	0.	0.	0.	58.	121.	161.	185.	192.	185.	161.	121.	58.	0.	0.	0.	0.	1240.	118.	199.	57.	89.		
SOUTHWEST	0.	0.	0.	0.	8.	21.	65.	109.	146.	171.	178.	161.	94.	0.	0.	0.	0.	953.	95.	157.	47.	72.		
WEST	0.	0.	0.	0.	8.	19.	27.	32.	34.	76.	107.	117.	80.	0.	0.	0.	0.	500.	58.	91.	33.	46.		
NORTHWEST	0.	0.	0.	0.	0.	8.	19.	27.	32.	34.	32.	27.	19.	24.	0.	0.	0.	221.	36.	51.	24.	30.		
NORTH	0.	0.	0.	0.	8.	19.	27.	32.	34.	32.	27.	19.	8.	0.	0.	0.	0.	206.	35.	48.	23.	29.		
NORTHEAST	0.	0.	0.	0.	24.	19.	27.	32.	34.	32.	27.	19.	8.	0.	0.	0.	0.	221.	36.	51.	24.	30.		
EAST	0.	0.	0.	0.	80.	117.	107.	76.	34.	32.	27.	19.	8.	0.	0.	0.	0.	500.	58.	91.	33.	46.		
SOUTHEAST	0.	0.	0.	0.	94.	161.	178.	171.	146.	109.	65.	21.	8.	0.	0.	0.	0.	953.	95.	157.	47.	72.		
HORIZ.	0.	0.	0.	0.	0.	24.	67.	102.	125.	132.	102.	67.	24.	0.	0.	0.	0.	767.	80.	130.	42.	62.		
MONTH	2	HO	1983.	TOD	23.	TOT	23.	KT	.615	KD	.170													
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD		
SOUTH	0.	0.	0.	17.	88.	142.	181.	206.	214.	206.	181.	142.	88.	17.	0.	0.	0.	1483.	129.	215.	71.	109.		
SOUTHWEST	0.	0.	0.	4.	16.	27.	65.	118.	164.	197.	212.	205.	163.	42.	0.	0.	0.	1212.	110.	180.	62.	94.		
WEST	0.	0.	0.	4.	16.	27.	36.	41.	43.	97.	140.	163.	151.	44.	0.	0.	0.	762.	77.	122.	47.	67.		
NORTHWEST	0.	0.	0.	0.	4.	16.	27.	36.	41.	43.	41.	36.	42.	60.	23.	0.	0.	370.	49.	71.	35.	45.		
NORTH	0.	0.	0.	4.	16.	27.	36.	41.	43.	41.	36.	27.	16.	4.	0.	0.	0.	291.	44.	61.	32.	40.		
NORTHEAST	0.	0.	0.	23.	60.	42.	36.	41.	43.	41.	36.	27.	16.	4.	0.	0.	0.	370.	49.	71.	35.	45.		
EAST	0.	0.	0.	44.	151.	163.	140.	97.	43.	41.	36.	27.	16.	4.	0.	0.	0.	762.	77.	122.	47.	67.		
SOUTHEAST	0.	0.	0.	42.	163.	205.	212.	197.	164.	118.	65.	27.	16.	4.	0.	0.	0.	1212.	110.	180.	62.	94.		
HORIZ.	0.	0.	0.	9.	61.	113.	154.	179.	188.	179.	154.	113.	61.	9.	0.	0.	0.	1219.	110.	181.	62.	94.		
MONTH	3	HO	2612.	TOD	28.	TOT	32.	KT	.637	KD	.165													
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD		
SOUTH	0.	0.	0.	33.	84.	131.	167.	191.	198.	191.	167.	131.	84.	33.	0.	0.	0.	1409.	119.	192.	77.	114.		
SOUTHWEST	0.	0.	0.	11.	24.	35.	53.	108.	155.	191.	210.	204.	181.	115.	0.	0.	0.	1292.	111.	179.	73.	107.		
WEST	0.	0.	0.	11.	24.	35.	44.	49.	51.	108.	155.	185.	187.	137.	0.	0.	0.	987.	92.	143.	63.	89.		
NORTHWEST	0.	0.	0.	11.	24.	35.	44.	49.	51.	49.	44.	73.	97.	85.	0.	0.	0.	565.	65.	94.	50.	65.		
NORTH	0.	0.	0.	11.	24.	35.	44.	49.	51.	49.	44.	35.	24.	11.	0.	0.	0.	380.	53.	73.	44.	54.		
NORTHEAST	0.	0.	0.	85.	97.	73.	44.	49.	51.	49.	44.	35.	24.	11.	0.	0.	0.	565.	65.	94.	50.	65.		
EAST	0.	0.	0.	137.	187.	185.	155.	108.	51.	49.	44.	35.	24.	11.	0.	0.	0.	987.	92.	143.	63.	89.		
SOUTHEAST	0.	0.	0.	115.	181.	208.	210.	191.	155.	108.	53.	35.	24.	11.	0.	0.	0.	1292.	111.	179.	73.	107.		
HORIZ.	0.	0.	0.	41.	100.	154.	196.	223.	232.	196.	154.	100.	41.	0.	0.	0.	0.	1663.	135.	222.	85.	129.		

LOCATION GRAND LAKE, COLORADO LATITUDE 40 DEGREES 15 MINUTES

MONTH	4	HO	3230.	TOD	39.	TOT	42.	KT	.597	KD	.174						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	7.	20.	59.	97.	128.	147.	154.	147.	128.	97.	59.	20.	7.	0.	0.
SOUTHWEST	0.	0.	7.	20.	32.	43.	51.	85.	126.	157.	173.	174.	156.	116.	44.	0.	0.
WEST	0.	0.	7.	20.	32.	43.	51.	56.	58.	107.	147.	173.	179.	155.	70.	0.	0.
NORTHWEST	0.	0.	7.	20.	32.	43.	51.	56.	58.	56.	65.	97.	117.	115.	59.	0.	0.
NORTH	0.	0.	17.	20.	32.	43.	51.	56.	58.	56.	51.	43.	32.	20.	17.	0.	0.
NORTHEAST	0.	0.	59.	115.	117.	97.	65.	56.	58.	56.	51.	43.	32.	20.	7.	0.	0.
EAST	0.	0.	70.	155.	179.	173.	147.	107.	58.	56.	51.	43.	32.	20.	7.	0.	0.
SOUTHEAST	0.	0.	44.	116.	156.	174.	173.	157.	126.	85.	51.	43.	32.	20.	7.	0.	0.
HORIZ.	0.	0.	19.	72.	127.	175.	213.	237.	245.	237.	213.	175.	127.	72.	19.	0.	0.

MONTH	5	HO	3621.	TOD	49.	TOT	51.	KT	.553	KD	.181						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	2.	12.	25.	42.	73.	99.	115.	121.	115.	99.	73.	42.	25.	12.	2.	0.
SOUTHWEST	0.	2.	12.	25.	36.	46.	54.	68.	103.	129.	143.	143.	129.	100.	55.	2.	0.
WEST	0.	2.	12.	25.	36.	46.	54.	59.	60.	101.	134.	156.	162.	146.	97.	3.	0.
NORTHWEST	0.	2.	12.	25.	36.	46.	54.	59.	60.	59.	79.	105.	121.	121.	89.	3.	0.
NORTH	0.	2.	36.	39.	36.	46.	54.	59.	60.	59.	54.	46.	36.	39.	36.	2.	0.
NORTHEAST	0.	3.	89.	121.	121.	105.	79.	59.	60.	59.	54.	46.	36.	25.	12.	2.	0.
EAST	0.	3.	97.	146.	162.	156.	134.	101.	60.	59.	54.	46.	36.	25.	12.	2.	0.
SOUTHEAST	0.	2.	55.	100.	129.	143.	143.	129.	103.	68.	54.	46.	36.	25.	12.	2.	0.
HORIZ.	0.	3.	38.	87.	135.	178.	211.	231.	238.	231.	211.	178.	135.	87.	38.	3.	0.

MONTH	6	HO	3762.	TOD	57.	TOT	59.	KT	.630	KD	.167						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	3.	14.	26.	38.	71.	100.	119.	125.	119.	100.	71.	38.	26.	14.	3.	0.
SOUTHWEST	0.	3.	14.	26.	38.	48.	55.	65.	106.	138.	156.	159.	145.	114.	67.	9.	0.
WEST	0.	3.	14.	26.	38.	48.	55.	60.	62.	112.	153.	181.	191.	176.	126.	19.	0.
NORTHWEST	0.	3.	14.	26.	38.	48.	55.	60.	62.	60.	93.	125.	147.	150.	119.	21.	0.
NORTH	0.	12.	51.	52.	39.	48.	55.	60.	62.	60.	55.	48.	39.	52.	51.	12.	0.
NORTHEAST	0.	21.	119.	150.	147.	125.	93.	60.	62.	60.	55.	48.	38.	26.	14.	3.	0.
EAST	0.	19.	126.	176.	191.	181.	153.	112.	62.	60.	55.	48.	38.	26.	14.	3.	0.
SOUTHEAST	0.	9.	67.	114.	145.	159.	156.	138.	106.	65.	55.	48.	38.	26.	14.	3.	0.
HORIZ.	0.	7.	50.	106.	161.	209.	246.	269.	277.	269.	246.	209.	161.	106.	50.	7.	0.

LOCATION GRAND LAKE, COLORADO LATITUDE 40 DEGREES 15 MINUTES

MONTH - 7 HO 3618. TOD 63. TOT 64. KT .572 KD .178

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGD	SAG/ALL DAY SATGS	ALL DAY SATGD
SOUTH	0.	2.	12.	25.	42.	75.	101.	118.	124.	118.	101.	75.	42.	25.	12.	2.	0.	872.	112.	150.	94.	117.
SOUTHWEST	0.	2.	12.	25.	36.	46.	54.	69.	105.	132.	147.	148.	134.	103.	56.	2.	0.	1074.	124.	171.	101.	129.
WEST	0.	2.	12.	25.	36.	46.	54.	59.	61.	104.	139.	162.	168.	152.	99.	3.	0.	1123.	127.	175.	102.	132.
NORTHWEST	0.	2.	12.	25.	36.	46.	54.	59.	61.	59.	81.	108.	125.	125.	91.	3.	0.	888.	113.	152.	94.	118.
NORTH	0.	2.	37.	40.	36.	46.	54.	59.	61.	59.	54.	46.	36.	40.	37.	2.	0.	610.	97.	128.	85.	101.
NORTHEAST	0.	3.	91.	125.	125.	108.	81.	59.	61.	59.	54.	46.	36.	25.	12.	2.	0.	888.	113.	152.	94.	118.
EAST	0.	3.	99.	152.	168.	162.	139.	104.	61.	59.	54.	46.	36.	25.	12.	2.	0.	1123.	127.	175.	102.	132.
SOUTHEAST	0.	2.	56.	103.	134.	148.	147.	132.	105.	69.	54.	46.	36.	25.	12.	2.	0.	1074.	124.	171.	101.	129.
HORIZ.	0.	3.	38.	89.	139.	184.	218.	240.	247.	240.	218.	184.	139.	89.	38.	3.	0.	2070.	180.	270.	135.	189.

MONTH 8 HO 3207. TOD 61. TOT 62. KT .516 KD .186

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGD	SAG/ALL DAY SATGS	ALL DAY SATGD
SOUTH	0.	0.	7.	20.	52.	84.	109.	125.	131.	125.	109.	84.	52.	20.	7.	0.	0.	926.	118.	162.	93.	118.
SOUTHWEST	0.	0.	7.	19.	31.	42.	50.	77.	109.	133.	145.	143.	126.	91.	33.	0.	0.	1006.	123.	170.	96.	123.
WEST	0.	0.	7.	19.	31.	42.	50.	55.	56.	94.	125.	143.	144.	121.	51.	0.	0.	938.	119.	153.	94.	118.
NORTHWEST	0.	0.	7.	19.	31.	42.	50.	55.	56.	55.	61.	83.	96.	91.	43.	0.	0.	689.	104.	136.	85.	103.
NORTH	0.	0.	14.	19.	31.	42.	50.	55.	56.	55.	50.	42.	31.	19.	14.	0.	0.	478.	91.	113.	78.	91.
NORTHEAST	0.	0.	43.	91.	96.	83.	61.	55.	56.	55.	50.	42.	31.	19.	7.	0.	0.	689.	104.	136.	85.	103.
EAST	0.	0.	51.	121.	144.	143.	125.	94.	56.	55.	50.	42.	31.	19.	7.	0.	0.	938.	119.	163.	94.	118.
SOUTHEAST	0.	0.	33.	91.	126.	143.	145.	133.	109.	77.	50.	42.	31.	19.	7.	0.	0.	1006.	123.	170.	96.	123.
HORIZ.	0.	0.	17.	62.	109.	150.	183.	203.	210.	203.	183.	150.	109.	62.	17.	0.	0.	1656.	163.	241.	118.	162.

MONTH 9 HO 2600. TOD 55. TOT 55. KT .626 KD .168

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGD	SAG/ALL DAY SATGS	ALL DAY SATGD
SOUTH	0.	0.	0.	30.	80.	126.	185.	193.	185.	162.	126.	80.	30.	0.	0.	0.	0.	1360.	148.	219.	101.	137.
SOUTHWEST	0.	0.	0.	14.	24.	35.	52.	105.	151.	186.	203.	201.	172.	105.	0.	0.	0.	1246.	140.	205.	97.	130.
WEST	0.	0.	0.	11.	24.	35.	44.	49.	51.	106.	151.	178.	178.	125.	0.	0.	0.	954.	120.	170.	87.	112.
NORTHWEST	0.	0.	0.	11.	24.	35.	44.	49.	51.	49.	44.	72.	93.	79.	0.	0.	0.	553.	93.	122.	74.	88.
NORTH	0.	0.	0.	11.	24.	35.	44.	49.	51.	49.	44.	35.	24.	11.	0.	0.	0.	379.	81.	101.	68.	78.
NORTHEAST	0.	0.	0.	79.	93.	72.	44.	49.	51.	49.	44.	35.	24.	11.	0.	0.	0.	553.	93.	122.	74.	88.
EAST	0.	0.	0.	125.	178.	178.	151.	106.	51.	49.	44.	35.	24.	11.	0.	0.	0.	954.	120.	170.	87.	112.
SOUTHEAST	0.	0.	0.	105.	172.	201.	203.	186.	151.	105.	52.	35.	24.	11.	0.	0.	0.	1246.	140.	205.	97.	130.
HORIZ.	0.	0.	1.	39.	98.	151.	193.	219.	228.	219.	193.	151.	98.	39.	1.	0.	0.	1627.	166.	251.	110.	153.

LOCATION	GRAND LAKE, COLORADO		LATITUDE 40 DEGREES 15 MINUTES																	
MONTH 10	HO 1949.	TOD 45.	TOT 44.	KT .583	KD .176															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD
	SOUTH	0.	0.	13.	79.	131.	169.	192.	200.	192.	169.	131.	79.	13.	0.	0.	0.	1367.	143.	223.
	SOUTHWEST	0.	0.	4.	16.	27.	63.	112.	154.	183.	196.	187.	144.	30.	0.	0.	0.	1115.	125.	190.
	WEST	0.	0.	4.	16.	27.	35.	41.	43.	42.	130.	149.	134.	31.	0.	0.	0.	700.	95.	136.
	NORTHWEST	0.	0.	4.	16.	27.	35.	41.	43.	41.	35.	39.	54.	17.	0.	0.	0.	351.	70.	91.
	NORTH	0.	0.	4.	16.	27.	35.	41.	43.	41.	35.	27.	16.	4.	0.	0.	0.	286.	66.	82.
	NORTHEAST	0.	0.	17.	54.	39.	35.	41.	43.	41.	35.	27.	16.	4.	0.	0.	0.	351.	70.	91.
	EAST	0.	0.	31.	134.	149.	130.	92.	43.	41.	35.	27.	16.	4.	0.	0.	0.	700.	95.	136.
	SOUTHEAST	0.	0.	30.	144.	187.	196.	183.	154.	112.	63.	27.	16.	4.	0.	0.	0.	1115.	125.	190.
	HORIZ.	0.	0.	8.	55.	105.	144.	168.	177.	168.	144.	105.	55.	8.	0.	0.	0.	1136.	126.	193.
MONTH 11	HO 1404.	TOD 30.	TOT 29.	KT .494	KD .188															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD
	SOUTH	0.	0.	0.	48.	105.	141.	162.	169.	162.	141.	105.	48.	0.	0.	0.	0.	1080.	117.	187.
	SOUTHWEST	0.	0.	0.	8.	21.	59.	97.	129.	150.	156.	138.	78.	0.	0.	0.	0.	835.	97.	152.
	WEST	0.	0.	0.	8.	18.	26.	31.	33.	69.	95.	102.	66.	0.	0.	0.	0.	449.	66.	96.
	NORTHWEST	0.	0.	0.	8.	18.	26.	31.	33.	31.	26.	18.	21.	0.	0.	0.	0.	214.	47.	61.
	NORTH	0.	0.	0.	8.	18.	26.	31.	33.	31.	26.	18.	8.	0.	0.	0.	0.	201.	46.	60.
	NORTHEAST	0.	0.	0.	21.	18.	26.	31.	33.	31.	26.	18.	8.	0.	0.	0.	0.	214.	47.	61.
	EAST	0.	0.	0.	66.	102.	95.	69.	33.	31.	26.	18.	8.	0.	0.	0.	0.	449.	66.	96.
	SOUTHEAST	0.	0.	0.	78.	138.	156.	150.	129.	97.	59.	21.	8.	0.	0.	0.	0.	835.	97.	152.
	HORIZ.	0.	0.	0.	22.	60.	92.	113.	120.	113.	92.	60.	22.	0.	0.	0.	0.	695.	86.	131.
MONTH 12	HO 1200.	TOD 23.	TOT 19.	KT .542	KD .182															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD
	SOUTH	0.	0.	0.	38.	117.	163.	188.	197.	188.	163.	117.	38.	0.	0.	0.	0.	1210.	125.	208.
	SOUTHWEST	0.	0.	0.	5.	23.	67.	111.	148.	172.	177.	152.	60.	0.	0.	0.	0.	914.	100.	163.
	WEST	0.	0.	0.	5.	15.	23.	29.	30.	72.	102.	107.	49.	0.	0.	0.	0.	432.	59.	89.
	NORTHWEST	0.	0.	0.	5.	15.	23.	29.	30.	29.	23.	15.	13.	0.	0.	0.	0.	183.	38.	51.
	NORTH	0.	0.	0.	5.	15.	23.	29.	30.	29.	23.	15.	5.	0.	0.	0.	0.	175.	37.	49.
	NORTHEAST	0.	0.	0.	13.	15.	23.	29.	30.	29.	23.	15.	5.	0.	0.	0.	0.	183.	38.	51.
	EAST	0.	0.	0.	49.	107.	102.	72.	30.	29.	23.	15.	5.	0.	0.	0.	0.	432.	59.	89.
	SOUTHEAST	0.	0.	0.	60.	152.	177.	172.	148.	111.	67.	23.	5.	0.	0.	0.	0.	914.	100.	163.
	HORIZ.	0.	0.	0.	13.	53.	89.	111.	119.	111.	89.	53.	13.	0.	0.	0.	0.	651.	78.	122.



## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	118.	129.	119.	101.	97.	104.	112.	118.	148.	143.	117.	125.	119.
SOUTHWEST	95.	110.	111.	107.	108.	120.	124.	123.	140.	125.	97.	100.	113.
WEST	58.	77.	92.	102.	111.	126.	127.	119.	120.	95.	66.	59.	96.
NORTHWEST	36.	49.	65.	84.	98.	113.	113.	104.	93.	70.	47.	38.	76.
NORTH	35.	44.	53.	68.	83.	95.	97.	91.	81.	66.	46.	37.	66.
NORTHEAST	36.	49.	65.	84.	98.	113.	113.	104.	93.	70.	47.	38.	76.
EAST	58.	77.	92.	102.	111.	126.	127.	119.	120.	95.	66.	59.	96.
SOUTHEAST	95.	110.	111.	107.	108.	120.	124.	123.	140.	125.	97.	100.	113.
HORIZ.	80.	110.	135.	150.	163.	187.	180.	163.	166.	126.	86.	78.	135.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	199.	215.	192.	151.	135.	141.	150.	162.	219.	223.	187.	208.	182.
SOUTHWEST	157.	180.	179.	163.	154.	168.	171.	170.	205.	190.	152.	163.	171.
WEST	91.	122.	143.	154.	159.	180.	175.	163.	170.	136.	96.	89.	140.
NORTHWEST	51.	71.	94.	120.	136.	156.	152.	136.	122.	91.	61.	51.	103.
NORTH	48.	61.	73.	91.	109.	124.	124.	113.	101.	82.	60.	49.	86.
NORTHEAST	51.	71.	94.	120.	136.	156.	152.	136.	122.	91.	61.	51.	103.
EAST	91.	122.	143.	154.	159.	180.	175.	163.	170.	136.	96.	89.	140.
SOUTHEAST	157.	180.	179.	163.	154.	168.	171.	170.	205.	190.	152.	163.	171.
HORIZ.	130.	181.	222.	241.	250.	288.	270.	241.	251.	193.	131.	122.	210.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	57.	71.	77.	76.	80.	88.	94.	93.	101.	88.	64.	58.	79.
SOUTHWEST	47.	62.	73.	80.	87.	98.	101.	96.	97.	80.	56.	49.	77.
WEST	33.	47.	63.	77.	88.	102.	102.	94.	87.	67.	44.	33.	70.
NORTHWEST	24.	35.	50.	67.	81.	94.	85.	74.	68.	55.	36.	25.	60.
NORTH	23.	32.	44.	58.	71.	82.	85.	78.	68.	53.	36.	25.	55.
NORTHEAST	24.	35.	50.	67.	81.	94.	94.	85.	74.	55.	36.	25.	60.
EAST	33.	47.	63.	77.	88.	102.	102.	94.	87.	67.	44.	33.	70.
SOUTHEAST	47.	62.	73.	80.	87.	98.	101.	96.	97.	80.	56.	49.	77.
HORIZ.	42.	62.	85.	104.	119.	140.	135.	118.	110.	81.	52.	40.	91.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	89.	109.	114.	104.	103.	111.	117.	118.	137.	124.	92.	90.	109.
SOUTHWEST	72.	94.	107.	111.	114.	128.	129.	123.	130.	109.	78.	71.	106.
WEST	46.	67.	89.	106.	117.	135.	132.	118.	112.	85.	56.	45.	92.
NORTHWEST	30.	45.	65.	87.	103.	120.	118.	103.	88.	65.	42.	30.	75.
NORTH	29.	40.	54.	71.	87.	101.	101.	91.	78.	61.	41.	30.	65.
NORTHEAST	30.	45.	65.	87.	103.	120.	118.	103.	88.	65.	42.	30.	75.
EAST	46.	67.	89.	106.	117.	135.	132.	118.	112.	85.	56.	45.	92.
SOUTHEAST	72.	94.	107.	111.	114.	128.	129.	123.	130.	109.	78.	73.	106.
HORIZ.	62.	94.	129.	154.	172.	202.	189.	162.	153.	110.	70.	57.	129.

LOCATION GREAT FALLS, MONTANA LATITUDE 47 DEGREES 28 MINUTES

[illegible]

MONTH	2	HO	1613.	TOD	28.	TOT	25.	KT	.596	KD	.175					
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HOURLY SOLAR RADIATION																
SOUTH	0.	0.	0.	4.	77.	137.	180.	207.	216.	207.	180.	137.	77.	4.	0.	0.
SOUTHWEST	0.	0.	0.	2.	12.	22.	66.	119.	163.	194.	206.	193.	139.	7.	0.	0.
WEST	0.	0.	0.	2.	12.	22.	30.	35.	36.	88.	128.	148.	127.	8.	0.	0.
NORTHWEST	0.	0.	0.	2.	12.	22.	30.	35.	36.	35.	30.	30.	47.	5.	0.	0.
NORTH	0.	0.	0.	2.	12.	22.	30.	35.	36.	35.	30.	22.	12.	2.	0.	0.
NORTHEAST	0.	0.	0.	5.	47.	30.	30.	35.	36.	35.	30.	22.	12.	2.	0.	0.
EAST	0.	0.	0.	8.	127.	148.	128.	88.	36.	35.	30.	22.	12.	2.	0.	0.
SOUTHEAST	0.	0.	0.	7.	139.	193.	206.	194.	163.	119.	66.	22.	12.	2.	0.	0.
SORIZ.	0.	0.	0.	3.	42.	87.	123.	146.	154.	146.	123.	87.	42.	3.	0.	0.
DAILY TOTAL RADIATION																
SOUTH	0.	0.	0.	4.	77.	137.	180.	207.	216.	207.	180.	137.	77.	4.	0.	0.
SOUTHWEST	0.	0.	0.	2.	12.	22.	66.	119.	163.	194.	206.	193.	139.	7.	0.	0.
WEST	0.	0.	0.	2.	12.	22.	30.	35.	36.	88.	128.	148.	127.	8.	0.	0.
NORTHWEST	0.	0.	0.	2.	12.	22.	30.	35.	36.	35.	30.	30.	47.	5.	0.	0.
NORTH	0.	0.	0.	2.	12.	22.	30.	35.	36.	35.	30.	22.	12.	2.	0.	0.
NORTHEAST	0.	0.	0.	5.	47.	30.	30.	35.	36.	35.	30.	22.	12.	2.	0.	0.
EAST	0.	0.	0.	8.	127.	148.	128.	88.	36.	35.	30.	22.	12.	2.	0.	0.
SOUTHEAST	0.	0.	0.	7.	139.	193.	206.	194.	163.	119.	66.	22.	12.	2.	0.	0.
SORIZ.	0.	0.	0.	3.	42.	87.	123.	146.	154.	146.	123.	87.	42.	3.	0.	0.
SAG/DAYTIME SAG/ALL DAY																
SOUTH	0.	0.	0.	4.	77.	137.	180.	207.	216.	207.	180.	137.	77.	4.	0.	0.
SOUTHWEST	0.	0.	0.	2.	12.	22.	66.	119.	163.	194.	206.	193.	139.	7.	0.	0.
WEST	0.	0.	0.	2.	12.	22.	30.	35.	36.	88.	128.	148.	127.	8.	0.	0.
NORTHWEST	0.	0.	0.	2.	12.	22.	30.	35.	36.	35.	30.	30.	47.	5.	0.	0.
NORTH	0.	0.	0.	2.	12.	22.	30.	35.	36.	35.	30.	22.	12.	2.	0.	0.
NORTHEAST	0.	0.	0.	5.	47.	30.	30.	35.	36.	35.	30.	22.	12.	2.	0.	0.
EAST	0.	0.	0.	8.	127.	148.	128.	88.	36.	35.	30.	22.	12.	2.	0.	0.
SOUTHEAST	0.	0.	0.	7.	139.	193.	206.	194.	163.	119.	66.	22.	12.	2.	0.	0.
SORIZ.	0.	0.	0.	3.	42.	87.	123.	146.	154.	146.	123.	87.	42.	3.	0.	0.
DAILY TOTAL RADIATION																
SOUTH	0.	0.	0.	4.	77.	137.	180.	207.	216.	207.	180.	137.	77.	4.	0.	0.
SOUTHWEST	0.	0.	0.	2.	12.	22.	66.	119.	163.	194.	206.	193.	139.	7.	0.	0.
WEST	0.	0.	0.	2.	12.	22.	30.	35.	36.	88.	128.	148.	127.	8.	0.	0.
NORTHWEST	0.	0.	0.	2.	12.	22.	30.	35.	36.	35.	30.	30.	47.	5.	0.	0.

[illegible]

LOCATION GREAT FALLS, MONTANA LATITUDE 47 DEGREES 28 MINUTES

MONTH	4	HO	3063.	TOT	48.	TOT	44.	KT	.551	KD	.181						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	8.	25.	64.	101.	131.	150.	157.	150.	131.	101.	64.	25.	8.	0.	0.
SOUTHWEST	0.	0.	8.	19.	30.	40.	47.	90.	126.	153.	166.	165.	146.	109.	49.	0.	0.
WEST	0.	0.	8.	19.	30.	40.	47.	51.	53.	96.	132.	155.	160.	140.	75.	0.	0.
NORTHWEST	0.	0.	8.	19.	30.	40.	47.	51.	53.	51.	47.	78.	98.	100.	62.	0.	0.
NORTH	0.	0.	18.	19.	30.	40.	47.	51.	53.	51.	47.	40.	30.	19.	18.	0.	0.
NORTHEAST	0.	0.	62.	100.	98.	78.	47.	51.	53.	51.	47.	40.	30.	19.	8.	0.	0.
EAST	0.	0.	75.	140.	150.	155.	132.	96.	53.	51.	47.	40.	30.	19.	8.	0.	0.
SOUTHEAST	0.	0.	49.	109.	146.	165.	166.	153.	126.	90.	47.	40.	30.	19.	8.	0.	0.
HORIZ.	0.	0.	22.	67.	112.	152.	183.	203.	209.	203.	183.	152.	112.	67.	22.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS SAT6D SAT6S SAT6G																	
SAG/ALL DAY SATGS SAT6D SAT6S SAT6G																	

MONTH	5	HO	3569.	TOD	57.	TOT	54.	KT	.565	KD	.179						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	4.	14.	25.	54.	89.	117.	135.	141.	135.	117.	89.	54.	25.	14.	4.	0.
SOUTHWEST	0.	4.	14.	25.	36.	45.	52.	81.	117.	143.	157.	157.	142.	112.	67.	14.	0.
WEST	0.	4.	14.	25.	36.	45.	52.	56.	57.	100.	136.	160.	168.	155.	114.	28.	0.
NORTHWEST	0.	4.	14.	25.	36.	45.	52.	56.	57.	56.	65.	95.	116.	123.	102.	29.	0.
NORTH	0.	15.	39.	33.	36.	45.	52.	56.	57.	56.	52.	45.	36.	33.	39.	15.	0.
NORTHEAST	0.	29.	102.	123.	116.	95.	65.	56.	57.	56.	52.	45.	36.	25.	14.	4.	0.
EAST	0.	28.	114.	155.	168.	160.	136.	100.	57.	56.	52.	45.	36.	25.	14.	4.	0.
SOUTHEAST	0.	14.	67.	112.	142.	157.	143.	117.	81.	52.	45.	45.	36.	25.	14.	4.	0.
HORIZ.	0.	9.	47.	92.	137.	176.	206.	225.	232.	225.	206.	176.	137.	92.	47.	9.	0.
												</					

MONTH	6	HO	3761.	TOD	64.	TOT	61.	KT	.580	KD	.177						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	7.	17.	27.	49.	84.	112.	131.	137.	131.	112.	84.	49.	27.	17.	7.	0.
SOUTHWEST	0.	7.	17.	27.	38.	46.	53.	77.	114.	141.	156.	156.	142.	113.	71.	23.	0.
WEST	0.	7.	17.	27.	38.	46.	53.	57.	59.	103.	139.	164.	173.	163.	126.	52.	0.
NORTHWEST	0.	7.	17.	27.	38.	46.	53.	57.	59.	57.	72.	103.	125.	133.	117.	55.	0.
NORTH	0.	29.	49.	42.	38.	46.	53.	57.	59.	57.	53.	46.	38.	42.	49.	29.	0.
NORTHEAST	0.	55.	117.	133.	125.	103.	72.	57.	59.	57.	53.	46.	38.	27.	17.	7.	0.
EAST	0.	52.	126.	163.	173.	164.	139.	103.	59.	57.	53.	46.	38.	27.	17.	7.	0.
SOUTHEAST	0.	23.	71.	113.	142.	156.	141.	114.	77.	53.	46.	38.	27.	17.	7.	0.	0.
HORIZ.	0.	17.	57.	103.	148.	188.	218.	237.	244.	237.	218.	188.	148.	103.	57.	17.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS																	
SATGS																	
SAG/ALL DAY SATGS																	
SATGS																	

LOCATION	GREAT FALLS, MONTANA										LATITUDE 47 DEGREES 28 MINUTES																		
MONTH	7	HO	3570.	TO0	74.	TOT	70.	KT	.656	KD	.160																		
ORIENTATION	4	5	6	7	8	9	10	11	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD				SAG/ALL DAY SATGS SATGD					
									12	13	14	15	16	17	18	19	20	SATGS		SATGD	SATGS	SATGD	SATGS	SATGD					
SOUTH	0.	4.	14.	25.	58.	101.	135.	157.	165.	157.	135.	101.	58.	25.	14.	4.	0.	1155.	136.	184.	136.	146.	202.	109.	139.	146.	202.	115.	151.
SOUTHWEST	0.	4.	14.	25.	36.	45.	52.	87.	134.	168.	187.	188.	171.	134.	80.	15.	0.	1340.	146.	202.	146.	145.	200.	115.	149.	145.	200.	115.	149.
WEST	0.	4.	14.	25.	36.	45.	52.	56.	58.	113.	160.	192.	204.	190.	139.	34.	0.	1320.	139.	139.	139.	126.	166.	103.	128.	126.	166.	103.	128.
NORTHWEST	0.	4.	14.	25.	36.	45.	52.	56.	58.	56.	69.	109.	139.	149.	125.	34.	0.	870.	126.	166.	126.	126.	166.	103.	128.	126.	166.	103.	128.
NORTH	0.	18.	45.	35.	36.	45.	52.	56.	58.	56.	52.	45.	36.	35.	45.	18.	0.	631.	108.	134.	108.	108.	134.	91.	108.	108.	134.	91.	108.
NORTHEAST	0.	34.	125.	149.	139.	109.	69.	56.	58.	56.	52.	45.	36.	25.	14.	4.	0.	970.	126.	166.	126.	126.	166.	103.	128.	126.	166.	103.	128.
EAST	0.	34.	139.	190.	204.	192.	160.	113.	58.	56.	52.	45.	36.	25.	14.	4.	0.	1320.	145.	200.	145.	145.	200.	115.	149.	145.	200.	115.	149.
SOUTHEAST	0.	15.	80.	134.	171.	188.	187.	168.	134.	87.	52.	45.	36.	25.	14.	4.	0.	1340.	146.	202.	146.	146.	202.	115.	151.	146.	202.	115.	151.
HORIZ.	0.	9.	52.	106.	159.	205.	241.	264.	271.	264.	241.	205.	159.	106.	52.	9.	0.	2342.	200.	297.	200.	200.	297.	150.	211.	200.	297.	150.	211.
MONTH	8	HO	3042.	TO0	71.	TOT	67.	KT	.627	KD	.167																		
ORIENTATION	4	5	6	7	8	9	10	11	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD				SAG/ALL DAY SATGS SATGD					
									12	13	14	15	16	17	18	19	20	SATGS		SATGD	SATGS	SATGD	SATGS	SATGD					
SOUTH	0.	0.	8.	26.	71.	115.	151.	174.	182.	174.	151.	115.	71.	26.	8.	0.	0.	1272.	147.	205.	147.	147.	205.	111.	144.	147.	205.	111.	144.
SOUTHWEST	0.	0.	8.	19.	30.	40.	47.	99.	144.	177.	195.	193.	171.	126.	53.	0.	0.	1303.	149.	208.	149.	149.	208.	112.	146.	149.	208.	112.	146.
WEST	0.	0.	8.	19.	30.	40.	47.	52.	53.	107.	152.	181.	189.	163.	83.	0.	0.	1125.	138.	190.	138.	138.	190.	106.	135.	138.	190.	106.	135.
NORTHWEST	0.	0.	8.	19.	30.	40.	47.	52.	53.	52.	48.	87.	113.	116.	69.	0.	0.	733.	115.	148.	115.	115.	148.	92.	111.	115.	148.	92.	111.
NORTH	0.	0.	19.	19.	30.	40.	47.	52.	53.	52.	47.	40.	30.	19.	8.	0.	0.	466.	99.	120.	99.	99.	120.	83.	95.	99.	120.	83.	95.
NORTHEAST	0.	0.	69.	116.	113.	87.	48.	52.	53.	52.	47.	40.	30.	19.	8.	0.	0.	733.	115.	148.	115.	115.	148.	92.	111.	115.	148.	92.	111.
EAST	0.	0.	83.	163.	189.	181.	152.	107.	53.	52.	47.	40.	30.	19.	8.	0.	0.	1125.	138.	190.	138.	138.	190.	106.	135.	138.	190.	106.	135.
SOUTHEAST	0.	0.	53.	126.	171.	193.	195.	177.	144.	99.	47.	40.	30.	19.	8.	0.	0.	1303.	149.	208.	149.	149.	208.	112.	146.	149.	208.	112.	146.
HORIZ.	0.	0.	23.	73.	126.	172.	209.	232.	239.	232.	209.	172.	126.	73.	23.	0.	0.	1908.	185.	272.	185.	185.	272.	132.	182.	185.	272.	132.	182.
MONTH	9	HO	2312.	TO0	61.	TOT	57.	KT	.626	KD	.168																		
ORIENTATION	4	5	6	7	8	9	10	11	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD				SAG/ALL DAY SATGS SATGD					
									12	13	14	15	16	17	18	19	20	SATGS		SATGD	SATGS	SATGD	SATGS	SATGD					
SOUTH	0.	0.	0.	30.	84.	135.	175.	201.	209.	201.	175.	135.	84.	30.	0.	0.	0.	1462.	160.	236.	160.	160.	236.	107.	145.	160.	236.	107.	145.
SOUTHWEST	0.	0.	0.	10.	21.	31.	39.	114.	161.	196.	212.	206.	173.	100.	0.	0.	0.	1283.	148.	215.	148.	148.	215.	101.	134.	148.	215.	101.	134.
WEST	0.	0.	0.	10.	21.	31.	39.	44.	46.	101.	147.	174.	172.	117.	0.	0.	0.	904.	122.	169.	122.	122.	169.	88.	111.	122.	169.	88.	111.
NORTHWEST	0.	0.	0.	10.	21.	31.	39.	44.	46.	44.	39.	59.	84.	71.	0.	0.	0.	488.	94.	119.	94.	94.	119.	74.	86.	94.	119.	74.	86.
NORTH	0.	0.	0.	10.	21.	31.	39.	44.	46.	44.	39.	31.	21.	10.	0.	0.	0.	337.	84.	101.	84.	84.	101.	68.	77.	84.	101.	68.	77.
NORTHEAST	0.	0.	0.	71.	84.	59.	39.	44.	46.	44.	39.	31.	21.	10.	0.	0.	0.	488.	94.	119.	94.	94.	119.	74.	86.	94.	119.	74.	86.
EAST	0.	0.	0.	117.	172.	174.	147.	101.	46.	44.	39.	31.	21.	10.	0.	0.	0.	904.	122.	169.	122.	122.	169.	88.	111.	122.	169.	88.	111.
SOUTHEAST	0.	0.	0.	100.	173.	206.	212.	196.	161.	114.	59.	31.	21.	10.	0.	0.	0.	1283.	148.	215.	148.	148.	215.	101.	134.	148.	215.	101.	134.
HORIZ.	0.	0.	1.	34.	86.	134.	172.	196.	204.	196.	172.	134.	86.	34.	1.	0.	0.	1447.	159.	234.	159.	159.	234.	106.	144.	159.	234.	106.	144.



LOCATION GREAT FALLS, MONTANA LATITUDE 47 DEGREES 28 MINUTES

MONTH	10	HO	1580.	TOD	51.	TOT	48.	KT	574	KD	.17A						
HOURLY SOLAR RADIATION																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	2.	70.	128.	171.	197.	206.	197.	171.	128.	70.	2.	0.	0.	0.
SOUTHWEST	0.	0.	0.	2.	12.	21.	64.	114.	156.	185.	195.	179.	124.	4.	0.	0.	0.
WEST	0.	0.	0.	2.	12.	21.	29.	34.	36.	84.	121.	138.	113.	4.	0.	0.	0.
NORTHWEST	0.	0.	0.	2.	12.	21.	29.	34.	36.	34.	29.	28.	42.	3.	0.	0.	0.
NORTH	0.	0.	0.	2.	12.	21.	29.	34.	36.	34.	29.	21.	12.	2.	0.	0.	0.
NORTHEAST	0.	0.	0.	3.	42.	28.	29.	34.	36.	34.	29.	21.	12.	2.	0.	0.	0.
EAST	0.	0.	0.	4.	113.	138.	121.	84.	36.	34.	29.	21.	12.	2.	0.	0.	0.
SOUTHEAST	0.	0.	0.	4.	124.	179.	195.	185.	156.	114.	64.	21.	12.	2.	0.	0.	0.
HORIZ.	0.	0.	0.	3.	39.	82.	117.	139.	147.	139.	117.	82.	39.	3.	0.	0.	0.
DAILY TOTAL RADIATION												1342.	151.	232.	91.	126.	
SAG/DAYTIME SAT6S SAT6D												1055.	129.	193.	82.	110.	
SAG/ALL DAY SAT6S SAT6D												593.	95.	131.	67.	83.	
DAILY TOTAL RADIATION												269.	71.	88.	57.	64.	
SAG/DAYTIME SAT6S SAT6D												231.	68.	82.	56.	62.	
SAG/ALL DAY SAT6S SAT6D												269.	71.	88.	57.	64.	
DAILY TOTAL RADIATION												593.	95.	131.	67.	83.	
SAG/DAYTIME SAT6S SAT6D												1055.	129.	193.	82.	110.	
SAG/ALL DAY SAT6S SAT6D												906.	118.	173.	77.	101.	

DAILY TOTAL RADIATION	1342.	1055.	593.	269.	231.	269.	593.	1055.	906.
SAG/DAYTIME SATGS	151.	129.	95.	71.	68.	71.	95.	129.	118.
SATGS SATGD	232.	193.	131.	88.	82.	88.	131.	193.	173.
SAG/ALL DAY SATGS	91.	82.	67.	57.	56.	57.	67.	82.	77.
SATGD SATGD	126.	110.	83.	64.	62.	64.	83.	110.	101.

MONTH 11 HO 1007. TOD 39. TOT 35. KT 503 KD .188

ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	0.	18.	95.	142.	169.	178.	169.	142.	95.	18.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	0.	4.	17.	57.	99.	134.	155.	156.	124.	28.	0.	0.	0.
WEST	0.	0.	0.	0.	0.	4.	12.	20.	24.	26.	64.	89.	84.	24.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	0.	4.	12.	20.	24.	26.	24.	20.	12.	8.	0.	0.	0.
NORTH	0.	0.	0.	0.	0.	4.	12.	20.	24.	26.	24.	20.	12.	4.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	0.	8.	12.	20.	24.	26.	24.	20.	12.	4.	0.	0.	0.
EAST	0.	0.	0.	0.	0.	24.	88.	89.	64.	26.	24.	20.	12.	4.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	0.	28.	124.	156.	155.	134.	99.	57.	17.	4.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	0.	7.	39.	69.	89.	96.	89.	69.	39.	7.	0.	0.	0.

DAILY TOTAL RADIATION	1028.	774.	351.	150.	146.	150.	351.	774.	507.
SAG/DAYTIME SATGS	127.	105.	68.	51.	51.	68.	105.	127.	82.
SATGS SATGD	200.	160.	93.	62.	61.	93.	160.	200.	118.
SAG/ALL DAY SATGS	68.	60.	46.	40.	40.	46.	60.	68.	51.
SATGD SATGD	95.	80.	56.	44.	44.	56.	80.	95.	65.

MONTH 12 HO 802. TOD 29. TOT 26. KT 518 KD .185

ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	0.	1.	86.	147.	179.	190.	179.	147.	86.	1.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	0.	1.	16.	59.	104.	141.	162.	158.	110.	1.	0.	0.	0.
WEST	0.	0.	0.	0.	0.	1.	9.	16.	21.	22.	62.	86.	76.	1.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	0.	1.	9.	16.	21.	22.	21.	16.	9.	1.	0.	0.	0.
NORTH	0.	0.	0.	0.	0.	1.	9.	16.	21.	22.	21.	16.	9.	1.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	0.	1.	9.	16.	21.	22.	21.	16.	9.	1.	0.	0.	0.
EAST	0.	0.	0.	0.	0.	1.	76.	86.	62.	22.	21.	16.	9.	1.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	0.	1.	110.	158.	162.	141.	104.	59.	16.	1.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	0.	1.	27.	58.	78.	86.	78.	58.	27.	1.	0.	0.	0.

DAILY TOTAL RADIATION	1014.	751.	293.	116.	116.	293.	751.	1014.	415.
SAG/DAYTIME SATGS	124.	99.	57.	40.	40.	57.	99.	124.	68.
SATGS SATGD	201.	157.	79.	49.	49.	79.	157.	201.	100.
SAG/ALL DAY SATGS	59.	51.	36.	30.	30.	36.	51.	59.	40.
SATGD SATGD	86.	70.	44.	33.	33.	44.	70.	86.	51.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	129.	133.	131.	110.	113.	116.	136.	147.	160.	151.	127.	124.	131.
SOUTHWEST	103.	110.	120.	112.	121.	126.	146.	149.	148.	129.	105.	99.	122.
WEST	60.	74.	95.	104.	120.	128.	145.	138.	122.	95.	68.	57.	101.
NORTHWEST	39.	48.	67.	86.	105.	115.	126.	115.	94.	71.	51.	40.	80.
NORTH	38.	45.	57.	74.	90.	100.	108.	99.	84.	68.	51.	40.	71.
NORTHEAST	39.	48.	67.	86.	105.	115.	126.	115.	94.	71.	51.	40.	80.
EAST	60.	74.	95.	104.	120.	128.	145.	138.	122.	95.	68.	57.	101.
SOUTHEAST	103.	110.	120.	112.	121.	126.	146.	149.	148.	129.	105.	99.	122.
HORIZ.	74.	98.	129.	142.	167.	178.	200.	185.	159.	118.	82.	68.	133.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	213.	219.	209.	161.	155.	156.	184.	205.	236.	232.	200.	201.	198.
SOUTHWEST	166.	178.	188.	164.	169.	173.	202.	208.	215.	193.	160.	157.	181.
WEST	88.	113.	143.	150.	168.	177.	200.	190.	169.	131.	93.	79.	142.
NORTHWEST	50.	65.	93.	117.	141.	153.	166.	148.	119.	88.	62.	49.	104.
NORTH	49.	59.	75.	95.	116.	128.	134.	120.	101.	82.	61.	49.	89.
NORTHEAST	50.	65.	93.	117.	141.	153.	166.	148.	119.	88.	62.	49.	104.
EAST	88.	113.	143.	150.	168.	177.	200.	190.	169.	131.	93.	79.	142.
SOUTHEAST	166.	178.	188.	164.	169.	173.	202.	208.	215.	193.	160.	157.	181.
HORIZ.	114.	156.	205.	219.	250.	265.	297.	272.	234.	173.	118.	100.	200.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	61.	70.	80.	80.	89.	95.	109.	111.	107.	91.	68.	59.	85.
SOUTHWEST	51.	61.	75.	81.	94.	101.	115.	112.	101.	82.	60.	51.	82.
WEST	35.	45.	62.	77.	93.	103.	115.	106.	88.	67.	46.	36.	73.
NORTHWEST	28.	34.	48.	66.	84.	94.	103.	92.	74.	57.	40.	30.	62.
NORTH	27.	32.	43.	59.	75.	84.	91.	83.	68.	56.	40.	30.	57.
NORTHEAST	28.	34.	48.	66.	84.	94.	103.	92.	74.	57.	40.	30.	62.
EAST	35.	45.	62.	77.	93.	103.	115.	106.	88.	67.	46.	36.	73.
SOUTHEAST	51.	61.	75.	81.	94.	101.	115.	112.	101.	82.	60.	51.	82.
HORIZ.	41.	55.	79.	98.	123.	135.	150.	132.	106.	77.	51.	40.	91.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	92.	108.	120.	109.	115.	121.	139.	144.	145.	126.	95.	86.	117.
SOUTHWEST	75.	90.	109.	111.	124.	132.	151.	146.	134.	110.	80.	70.	111.
WEST	46.	62.	86.	103.	123.	135.	149.	135.	111.	83.	56.	44.	94.
NORTHWEST	32.	41.	61.	84.	107.	119.	128.	111.	86.	64.	44.	33.	76.
NORTH	31.	38.	52.	71.	91.	102.	108.	95.	77.	62.	44.	33.	67.
NORTHEAST	32.	41.	61.	84.	107.	119.	128.	111.	86.	64.	44.	33.	76.
EAST	46.	62.	86.	103.	123.	135.	149.	135.	111.	83.	56.	44.	94.
SOUTHEAST	75.	90.	109.	111.	124.	132.	151.	146.	134.	110.	80.	70.	111.
HORIZ.	55.	81.	118.	143.	176.	192.	211.	182.	144.	101.	65.	51.	127.

LOCATION	GREENSBORO, N.C.				LATITUDE				36 DEGREES				5 MINUTES									
MONTH	1	HO	1644.	TOT	42.	TOT	39.	KT	460	KD	.186-											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGD	
SOUTH	0.	0.	0.	0.	57.	102.	131.	149.	155.	149.	131.	102.	57.	0.	0.	0.	0.	1031.	122.	187.	72.	99.
SOUTHWEST	0.	0.	0.	0.	11.	21.	57.	91.	120.	140.	146.	135.	91.	0.	0.	0.	0.	812.	105.	156.	65.	86.
WEST	0.	0.	0.	0.	11.	21.	30.	35.	37.	69.	93.	101.	79.	0.	0.	0.	0.	475.	70.	109.	54.	67.
NORTHWEST	0.	0.	0.	0.	11.	21.	30.	35.	37.	35.	30.	21.	26.	0.	0.	0.	0.	244.	61.	76.	47.	53.
NORTH	0.	0.	0.	0.	11.	21.	30.	35.	37.	35.	30.	21.	11.	0.	0.	0.	0.	229.	60.	74.	46.	52.
NORTHEAST	0.	0.	0.	0.	26.	21.	30.	35.	37.	35.	30.	21.	11.	0.	0.	0.	0.	244.	61.	76.	47.	53.
EAST	0.	0.	0.	0.	79.	101.	93.	69.	37.	35.	30.	21.	11.	0.	0.	0.	0.	475.	79.	109.	54.	67.
SOUTHEAST	0.	0.	0.	0.	91.	135.	146.	140.	120.	91.	57.	21.	11.	0.	0.	0.	0.	812.	105.	156.	65.	86.
HORIZ.	0.	0.	0.	0.	30.	69.	101.	121.	127.	121.	101.	69.	30.	0.	0.	0.	0.	769.	101.	150.	64.	84.
MONTH	2	HO	2185.	TOT	44.	TOT	41.	KT	499	KD	.18A											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGD	
SOUTH	0.	0.	0.	19.	68.	106.	134.	151.	157.	151.	134.	106.	68.	19.	0.	0.	0.	1113.	122.	186.	77.	106.
SOUTHWEST	0.	0.	0.	5.	18.	29.	55.	92.	124.	147.	157.	151.	123.	44.	0.	0.	0.	947.	111.	165.	71.	96.
WEST	0.	0.	0.	5.	18.	29.	38.	44.	46.	82.	111.	125.	116.	47.	0.	0.	0.	662.	91.	129.	62.	80.
NORTHWEST	0.	0.	0.	5.	18.	29.	38.	44.	46.	44.	38.	43.	52.	26.	0.	0.	0.	383.	71.	93.	53.	63.
NORTH	0.	0.	0.	5.	18.	29.	38.	44.	46.	44.	38.	29.	18.	5.	0.	0.	0.	315.	66.	84.	51.	59.
NORTHEAST	0.	0.	0.	26.	52.	43.	38.	44.	46.	44.	38.	29.	18.	5.	0.	0.	0.	383.	71.	93.	53.	63.
EAST	0.	0.	0.	47.	116.	125.	111.	82.	46.	44.	38.	29.	18.	5.	0.	0.	0.	662.	91.	129.	62.	80.
SOUTHEAST	0.	0.	0.	44.	123.	151.	157.	147.	124.	92.	55.	29.	18.	5.	0.	0.	0.	947.	111.	165.	71.	96.
HORIZ.	0.	0.	0.	13.	58.	101.	135.	157.	164.	157.	135.	101.	58.	13.	0.	0.	0.	1091.	121.	183.	76.	105.
MONTH	3	HO	2763.	TOT	52.	TOT	48.	KT	499	KD	.188											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGD	
SOUTH	0.	0.	0.	25.	62.	94.	119.	135.	141.	135.	119.	94.	62.	25.	0.	0.	0.	1013.	116.	169.	81.	107.
SOUTHWEST	0.	0.	0.	13.	25.	37.	46.	83.	115.	138.	149.	147.	127.	81.	0.	0.	0.	962.	113.	164.	79.	104.
WEST	0.	0.	0.	13.	25.	37.	46.	51.	53.	90.	119.	135.	133.	97.	0.	0.	0.	798.	103.	144.	74.	95.
NORTHWEST	0.	0.	0.	13.	25.	37.	46.	51.	53.	51.	46.	66.	76.	63.	0.	0.	0.	526.	85.	113.	65.	70.
NORTH	0.	0.	0.	13.	25.	37.	46.	51.	53.	51.	46.	37.	25.	13.	0.	0.	0.	396.	77.	98.	61.	71.
NORTHEAST	0.	0.	0.	63.	76.	66.	46.	51.	53.	51.	46.	37.	25.	13.	0.	0.	0.	526.	85.	113.	65.	79.
EAST	0.	0.	0.	97.	133.	135.	119.	90.	53.	51.	46.	37.	25.	13.	0.	0.	0.	798.	103.	144.	74.	95.
SOUTHEAST	0.	0.	0.	81.	127.	147.	149.	138.	115.	83.	46.	37.	25.	13.	0.	0.	0.	962.	113.	164.	79.	104.
SORIZ.	0.	0.	0.	36.	85.	128.	162.	183.	190.	183.	162.	128.	85.	36.	0.	0.	0.	1377.	140.	212.	92.	128.





LOCATION	GREENSBORO, N.C.										LATITUDE 36 DEGREES 5 MINUTES													
MONTH	7	HO	3628.	TOD	80.	TOT	77.	KT	.552	KD	.181													
ORIENTATION																								
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY			
																	SATGS	SATGD	SATGS	SATGD	SATGS	SATGD		
SOUTH	0.	0.	11.	24.	36.	48.	88.	104.	109.	104.	88.	64.	36.	24.	11.	0.	0.	764.	125.	159.	103.	123.		
SOUTHWEST	0.	0.	11.	24.	36.	47.	55.	61.	95.	121.	135.	136.	123.	94.	48.	0.	0.	986.	138.	182.	111.	137.		
WEST	0.	0.	11.	24.	36.	47.	55.	60.	62.	102.	135.	155.	160.	141.	86.	0.	0.	1074.	143.	191.	114.	142.		
NORTHWEST	0.	0.	11.	24.	36.	47.	55.	60.	62.	60.	88.	111.	124.	120.	80.	0.	0.	877.	131.	170.	107.	130.		
NORTH	0.	0.	34.	42.	37.	47.	55.	60.	62.	60.	55.	47.	37.	34.	0.	0.	0.	610.	116.	143.	98.	114.		
NORTHEAST	0.	0.	80.	120.	124.	111.	88.	60.	62.	60.	55.	47.	36.	24.	11.	0.	0.	877.	131.	170.	107.	130.		
EAST	0.	0.	86.	141.	160.	155.	135.	102.	62.	60.	55.	47.	36.	24.	11.	0.	0.	1074.	143.	191.	114.	142.		
SOUTHEAST	0.	0.	48.	94.	123.	136.	135.	121.	95.	61.	55.	47.	36.	24.	11.	0.	0.	986.	138.	182.	111.	137.		
HORIZ.	0.	1.	32.	83.	134.	179.	214.	236.	243.	236.	214.	179.	134.	83.	32.	1.	0.	2002.	197.	286.	146.	198.		

SAG/DAYTIME SATGS	125.	138.	131.	131.	116.	131.	138.	138.	197.
SAG/ALL DAY SATGS	159.	182.	191.	170.	143.	170.	191.	182.	286.
SAG/ALL DAY SATGS	103.	113.	114.	107.	98.	107.	114.	111.	146.

MONTH	8	HO	3282.	TOD	79.	TOT	76.	KT	.538	KD											.183											
ORIENTATION												HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY								
4												5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD	
SOUTH												0.	0.	6.	19.	49.	81.	106.	122.	128.	106.	81.	49.	19.	6.	0.	0.	894.	135.	177.	106.	130.
SOUTHWEST												0.	0.	6.	19.	32.	43.	52.	73.	108.	133.	147.	146.	130.	94.	30.	0.	1013.	142.	190.	110.	137.
WEST												0.	0.	6.	19.	32.	43.	52.	57.	59.	99.	132.	152.	153.	127.	47.	0.	978.	140.	186.	109.	135.
NORTHWEST												0.	0.	6.	19.	32.	43.	52.	57.	59.	57.	70.	93.	106.	97.	40.	0.	731.	124.	159.	101.	120.
NORTH												0.	0.	13.	22.	32.	43.	52.	57.	59.	57.	52.	43.	32.	22.	13.	0.	495.	110.	133.	93.	106.
NORTHEAST												0.	0.	40.	97.	106.	93.	70.	57.	59.	57.	52.	43.	32.	19.	6.	0.	731.	124.	159.	101.	120.
EAST												0.	0.	47.	127.	153.	152.	132.	99.	59.	57.	52.	43.	32.	19.	6.	0.	978.	140.	186.	109.	135.
SOUTHEAST												0.	0.	30.	94.	130.	146.	147.	133.	108.	73.	52.	43.	32.	19.	6.	0.	1013.	142.	190.	110.	137.
HORIZ.												0.	0.	15.	63.	115.	161.	197.	219.	227.	197.	161.	115.	63.	15.	0.	1766.	189.	273.	136.	183.	

SAG/DAYTIME SATGS	135.	142.	140.	124.	110.	124.	140.	142.	189.
SAG/ALL DAY SATGS	177.	190.	186.	159.	133.	159.	186.	190.	273.
SAG/ALL DAY SATGS	106.	110.	109.	101.	93.	101.	109.	110.	136.

MONTH	9	HO	2748.	TOD	74.	TOT	71.	KT	.527	KD	.184																						
ORIENTATION												HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY									
4												5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGS	SATGS	SATGS		
SOUTH												0.	0.	0.	25.	64.	99.	126.	143.	149.	143.	126.	99.	64.	25.	0.	0.	0.	1063.	146.	202.	107.	135.
SOUTHWEST												0.	0.	0.	12.	25.	37.	46.	86.	121.	146.	159.	156.	134.	83.	0.	0.	0.	1007.	142.	195.	105.	132.
WEST												0.	0.	0.	12.	25.	37.	46.	51.	53.	94.	126.	144.	141.	100.	0.	0.	0.	829.	170.	174.	99.	121.
NORTHWEST												0.	0.	0.	12.	25.	37.	46.	51.	53.	51.	46.	69.	80.	65.	0.	0.	0.	536.	110.	139.	89.	103.
NORTH												0.	0.	0.	12.	25.	37.	46.	51.	53.	51.	46.	37.	25.	12.	0.	0.	0.	397.	101.	122.	84.	95.
NORTHEAST												0.	0.	0.	65.	80.	69.	46.	51.	53.	51.	46.	37.	25.	12.	0.	0.	0.	536.	110.	138.	89.	103.
EAST												0.	0.	0.	100.	141.	144.	126.	94.	53.	51.	46.	37.	25.	12.	0.	0.	0.	829.	130.	174.	99.	121.
SOUTHEAST												0.	0.	0.	83.	134.	156.	159.	146.	121.	86.	46.	37.	25.	12.	0.	0.	0.	1007.	142.	195.	105.	132.
HORIZ.												0.	0.	1.	37.	88.	134.	170.	193.	201.	193.	170.	134.	88.	37.	1.	0.	0.	1447.	172.	248.	120.	159.

SAG/DAYTIME SATGS	146.	142.	130.	110.	101.	110.	130.	142.	172.
SAG/ALL DAY SATGS	202.	195.	174.	138.	122.	138.	174.	195.	248.
SAG/ALL DAY SATGS	107.	105.	99.	89.	84.	89.	105.	105.	120.

LOCATION	GREENSBORO, N.C.										LATITUDE 36 DEGREES 5 MINUTES									
MONTH 10	HO 2151.										TOT 63.									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		
	0.	0.	0.	17.	72.	114.	145.	164.	171.	164.	145.	114.	72.	17.	0.	0.	0.	1197.	147.	216.
SOUTH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1007.	134.	191.
SOUTHWEST	0.	0.	0.	5.	18.	29.	57.	98.	134.	159.	171.	164.	131.	41.	0.	0.	0.	686.	111.	150.
WEST	0.	0.	0.	5.	18.	29.	38.	44.	45.	47.	119.	135.	123.	43.	0.	0.	0.	381.	90.	111.
NORTHWEST	0.	0.	0.	5.	18.	29.	38.	44.	45.	44.	38.	44.	54.	24.	0.	0.	0.	312.	85.	103.
NORTH	0.	0.	0.	5.	18.	29.	38.	44.	45.	44.	38.	29.	18.	5.	0.	0.	0.	381.	90.	111.
NORTHEAST	0.	0.	0.	24.	54.	44.	38.	44.	45.	44.	38.	29.	18.	5.	0.	0.	0.	686.	111.	150.
EAST	0.	0.	0.	43.	123.	135.	119.	87.	45.	44.	38.	29.	18.	5.	0.	0.	0.	1007.	134.	191.
SOUTHEAST	0.	0.	0.	41.	131.	164.	171.	159.	134.	98.	57.	29.	18.	5.	0.	0.	0.	1142.	143.	209.
HORIZ.	0.	0.	0.	12.	59.	106.	142.	166.	174.	166.	142.	106.	59.	12.	0.	0.	0.			
MONTH 11	HO 1631.										TOT 51.									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1119.	138.	209.
SOUTH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	876.	119.	175.
SOUTHWEST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	503.	90.	122.
WEST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	250.	71.	87.
NORTHWEST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	234.	70.	84.
NORTH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	250.	71.	87.
NORTHEAST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	503.	90.	122.
EAST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	876.	119.	175.
SOUTHEAST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1119.	138.	209.
HORIZ.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.			
MONTH 12	HO 1432.										TOT 43.									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		
	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1050.	128.	197.
SOUTH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	812.	109.	162.
SOUTHWEST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	435.	78.	107.
WEST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	213.	60.	74.
NORTHWEST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	203.	60.	73.
NORTH	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	213.	60.	74.
NORTHEAST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	435.	78.	107.
EAST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	812.	109.	162.
SOUTHEAST	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	1050.	128.	197.
HORIZ.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	687.	90.	144.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	122.	122.	116.	114.	115.	119.	125.	135.	146.	147.	138.	128.	127.
SOUTHWEST	105.	111.	113.	121.	128.	134.	138.	142.	142.	134.	119.	109.	125.
WEST	79.	91.	103.	119.	143.	143.	143.	143.	130.	111.	90.	78.	113.
NORTHWEST	61.	71.	85.	104.	121.	132.	131.	124.	110.	90.	71.	60.	97.
NORTH	60.	66.	77.	90.	106.	116.	116.	110.	101.	85.	70.	60.	88.
NORTHEAST	61.	71.	85.	104.	121.	132.	131.	124.	110.	90.	71.	60.	97.
EAST	79.	91.	103.	119.	143.	143.	143.	140.	130.	111.	90.	78.	113.
SOUTHEAST	105.	111.	113.	121.	128.	134.	138.	142.	142.	134.	119.	109.	125.
HORIZ.	101.	121.	140.	166.	187.	198.	197.	180.	172.	143.	115.	90.	152.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	187.	186.	169.	157.	149.	151.	159.	177.	202.	216.	209.	197.	180.
SOUTHWEST	156.	165.	164.	171.	172.	177.	182.	190.	195.	191.	175.	162.	175.
WEST	109.	129.	144.	167.	182.	190.	191.	186.	174.	150.	122.	107.	154.
NORTHWEST	76.	93.	113.	140.	161.	173.	170.	159.	138.	111.	87.	74.	125.
NORTH	74.	84.	98.	114.	133.	146.	143.	133.	122.	103.	84.	73.	109.
NORTHEAST	76.	93.	113.	140.	161.	173.	170.	159.	138.	111.	87.	74.	125.
EAST	109.	129.	144.	167.	182.	190.	191.	186.	174.	150.	122.	107.	154.
SOUTHEAST	156.	165.	164.	171.	172.	177.	182.	190.	195.	191.	175.	162.	175.
HORIZ.	150.	183.	212.	251.	277.	290.	286.	273.	248.	209.	166.	144.	224.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	72.	77.	81.	86.	93.	100.	103.	106.	107.	97.	84.	74.	90.
SOUTHWEST	65.	71.	79.	90.	100.	108.	111.	110.	105.	91.	76.	66.	90.
WEST	54.	62.	74.	89.	103.	113.	114.	109.	99.	81.	64.	54.	85.
NORTHWEST	47.	53.	65.	81.	97.	107.	107.	101.	89.	71.	56.	47.	77.
NORTH	46.	51.	61.	73.	87.	98.	98.	93.	84.	69.	55.	47.	72.
NORTHEAST	47.	53.	65.	81.	97.	107.	107.	101.	89.	71.	56.	47.	77.
EAST	54.	62.	74.	89.	103.	113.	114.	109.	99.	81.	64.	54.	85.
SOUTHEAST	65.	71.	79.	90.	100.	108.	111.	110.	105.	91.	76.	66.	90.
HORIZ.	64.	76.	92.	115.	135.	147.	146.	136.	120.	96.	74.	62.	105.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	99.	106.	107.	110.	113.	119.	123.	130.	135.	129.	113.	101.	115.
SOUTHWEST	86.	96.	104.	117.	126.	134.	137.	137.	132.	118.	99.	87.	115.
WEST	67.	80.	95.	116.	132.	142.	142.	135.	121.	99.	77.	65.	106.
NORTHWEST	53.	63.	79.	101.	120.	132.	130.	120.	103.	81.	63.	52.	91.
NORTH	52.	59.	71.	86.	103.	115.	114.	106.	95.	77.	62.	52.	83.
NORTHEAST	53.	63.	79.	101.	120.	132.	130.	120.	103.	81.	63.	52.	91.
EAST	67.	80.	95.	116.	132.	142.	142.	135.	121.	99.	77.	65.	106.
SOUTHEAST	86.	96.	104.	117.	126.	134.	137.	137.	132.	118.	99.	87.	115.
HORIZ.	84.	105.	128.	162.	188.	202.	198.	183.	158.	126.	96.	80.	142.





LOCATION		GRIFFIN, GEORGIA		LATITUDE		33 DEGREES		15 MINUTES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
MONTH	4	HO	3349.	TOD	67.	TOT	63.	KT	.586	KD	.176																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
ORIENTATION		HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			

DAILY TOTAL		RADIATION		SAG/DAYTIME		SAG/ALL DAY	
				SATGS SATGD		SATGS SATGD	
SOUTH		915.		121.		93.	
SOUTHWEST		1085.		131.		98.	
WEST		1078.		130.		98.	
NORTHWEST		804.		114.		89.	
NORTH		518.		97.		80.	
NORTHEAST		804.		114.		89.	
EAST		1078.		130.		98.	
SOUTHEAST		1085.		131.		98.	
HORIZ.		1963.		182.		126.	

MONTH		5	HO	3632.	TOD	75.	TOT	71.	KT	.601	KD	.174							
ORIENTATION		HOURLY SOLAR RADIATION																	
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SOUTH		0.	0.	10.	23.	36.	62.	87.	103.	109.	103.	87.	62.	36.	23.	10.	0.	0.	
SOUTHWEST		0.	0.	10.	23.	36.	47.	56.	61.	95.	125.	143.	146.	133.	103.	50.	0.	0.	
WEST		0.	0.	10.	23.	36.	47.	56.	61.	63.	110.	148.	173.	179.	159.	92.	0.	0.	
NORTHWEST		0.	0.	10.	23.	36.	47.	56.	61.	63.	66.	99.	126.	141.	136.	86.	0.	0.	
NORTH		0.	0.	35.	47.	42.	47.	56.	61.	63.	61.	56.	47.	42.	47.	35.	0.	0.	
NORTHEAST		0.	0.	86.	136.	141.	126.	99.	66.	63.	61.	56.	47.	36.	23.	10.	0.	0.	
EAST		0.	0.	92.	159.	179.	173.	148.	110.	63.	61.	56.	47.	36.	23.	10.	0.	0.	
SOUTHEAST		0.	0.	50.	103.	133.	146.	143.	125.	95.	61.	56.	47.	36.	23.	10.	0.	0.	
HORIZ.		0.	0.	31.	88.	146.	196.	236.	260.	269.	260.	236.	196.	146.	88.	31.	0.	0.	
		DAILY TOTAL RADIATION										SAG/DAYTIME SAT6S		SAG/ALL DAY SAT6S					
		751.										119.		153.		97.		117.	
		1031.										136.		182.		107.		134.	
		1159.										143.		196.		111.		142.	
		953.										131.		174.		104.		129.	
		642.										113.		142.		93.		110.	
		953.										131.		174.		104.		129.	
		1159.										143.		196.		111.		142.	
		1031.										136.		182.		107.		134.	
		2183.										204.		303.		146.		203.	

DAILY TOTAL		RADIATION		SAG/DAYTIME		SAG/ALL DAY	
				SATGS SATGD		SATGS SATGD	
SOUTH		751.		119.		97.	
SOUTHWEST		1031.		136.		107.	
WEST		1159.		143.		111.	
NORTHWEST		953.		131.		104.	
NORTH		642.		113.		93.	
NORTHEAST		953.		131.		104.	
EAST		1159.		143.		111.	
SOUTHEAST		1031.		136.		107.	
HORIZ.		2183.		204.		146.	

MONTH	6	HO	3727.	TOD	81.	TOT	79.	KT	.583	KD	.176						
ORIENTATION		HOURLY SOLAR RADIATION															
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
<hr/>																	
SOUTH	0.	1.	12.	25.	37.	52.	76.	91.	96.	91.	76.	52.	37.	25.	12.	1.	0.
SOUTHWEST	0.	1.	12.	25.	37.	48.	56.	62.	86.	114.	130.	133.	122.	94.	50.	1.	0.
WEST	0.	1.	12.	25.	37.	48.	56.	62.	63.	107.	142.	165.	170.	152.	96.	1.	0.
NORTHWEST	0.	1.	12.	25.	37.	48.	56.	62.	63.	73.	103.	128.	141.	136.	93.	1.	0.
NORTH	0.	1.	42.	54.	51.	48.	56.	62.	63.	62.	56.	48.	51.	54.	42.	1.	0.
NORTHEAST	0.	1.	93.	136.	141.	128.	103.	73.	63.	62.	56.	48.	37.	25.	12.	1.	0.
EAST	0.	1.	96.	152.	170.	165.	142.	107.	63.	62.	56.	48.	37.	25.	12.	1.	0.
SOUTHEAST	0.	1.	50.	94.	122.	133.	130.	114.	86.	62.	56.	48.	37.	25.	12.	1.	0.
HORIZ.	0.	1.	37.	91.	146.	194.	231.	255.	263.	255.	231.	194.	146.	91.	37.	1.	0.
		DAILY TOTAL RADIATION										SAG/DAYTIME SAT6S		SAG/ALL DAY SAT6S		SAG6S	
		683.										121.		151.		103.	
		972.										137.		180.		112.	
		1137.										147.		197.		118.	
		979.										138.		181.		113.	
		692.										121.		152.		103.	
		979.										133.		181.		113.	
		1137.										147.		197.		118.	
		972.										137.		180.		112.	
		2172.										207.		303.		153.	

DAILY TOTAL		RADIATION		SAG/DAYTIME		SAG/ALL DAY	
				SATGS SATGD		SATGS SATGD	
SOUTH		683.		121.		103.	
SOUTHWEST		972.		137.		112.	
WEST		1137.		147.		118.	
NORTHWEST		979.		138.		113.	
NORTH		692.		121.		103.	
NORTHEAST		979.		138.		113.	
EAST		1137.		147.		118.	
SOUTHEAST		972.		137.		112.	
HORIZ.		2172.		207.		153.	

LOCATION	GRIFFIN, GEORGIA										LATITUDE 33 DEGREES 15 MINUTES															
MONTH	7	HO	3626.	TOH	83.	TOT	81.	KT	.562	KD	.172															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SAT6S SAT6D SAT6S SAT6D				
SOUTH	0.	0.	10.	23.	36.	59.	82.	97.	103.	97.	82.	59.	36.	23.	10.	0.	0.	719.	126.	158.	106.	124.	126.	158.	106.	124.
SOUTHWEST	0.	0.	10.	23.	36.	47.	55.	61.	61.	117.	133.	135.	122.	93.	45.	0.	0.	968.	140.	184.	114.	139.	140.	184.	114.	139.
WEST	0.	0.	10.	23.	36.	47.	55.	61.	63.	104.	138.	159.	163.	143.	81.	0.	0.	1083.	147.	196.	118.	146.	147.	196.	118.	146.
NORTHWEST	0.	0.	10.	23.	36.	47.	55.	61.	63.	66.	95.	118.	130.	123.	76.	0.	0.	901.	136.	177.	112.	135.	136.	177.	112.	135.
NORTH	0.	0.	32.	44.	41.	47.	55.	61.	63.	61.	55.	47.	41.	44.	32.	0.	0.	625.	120.	148.	102.	119.	120.	148.	102.	119.
NORTHEAST	0.	0.	76.	123.	130.	118.	95.	66.	63.	61.	55.	47.	36.	23.	10.	0.	0.	901.	136.	177.	112.	135.	136.	177.	112.	135.
EAST	0.	0.	81.	143.	163.	159.	138.	104.	63.	61.	55.	47.	36.	23.	10.	0.	0.	1083.	147.	196.	118.	146.	147.	196.	118.	146.
SOUTHEAST	0.	0.	45.	93.	122.	135.	133.	117.	91.	61.	55.	47.	36.	23.	10.	0.	0.	968.	140.	184.	114.	139.	140.	184.	114.	139.
HORIZ.	0.	0.	29.	82.	136.	183.	220.	243.	251.	243.	220.	183.	136.	82.	29.	0.	0.	2037.	203.	296.	151.	204.	203.	296.	151.	204.

MONTH	8	HO	3324.	TOH	82.	TOT	80.	KT	.578	KD	.177															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SAT6S SAT6D SAT6S SAT6D				
SOUTH	0.	0.	6.	19.	48.	80.	107.	124.	130.	124.	107.	80.	48.	19.	6.	0.	0.	896.	138.	182.	110.	134.	138.	182.	110.	134.
SOUTHWEST	0.	0.	6.	19.	32.	44.	53.	71.	109.	139.	155.	156.	140.	101.	29.	0.	0.	1054.	148.	199.	116.	144.	148.	199.	116.	144.
WEST	0.	0.	6.	19.	32.	44.	53.	59.	61.	107.	144.	166.	169.	140.	46.	0.	0.	1045.	148.	198.	116.	143.	148.	198.	116.	143.
NORTHWEST	0.	0.	6.	19.	32.	44.	53.	59.	61.	59.	79.	105.	118.	108.	39.	0.	0.	782.	131.	169.	107.	127.	131.	169.	107.	127.
NORTH	0.	0.	13.	24.	32.	44.	53.	59.	61.	59.	53.	44.	32.	24.	13.	0.	0.	510.	114.	139.	97.	111.	114.	139.	97.	111.
NORTHEAST	0.	0.	39.	108.	118.	105.	79.	59.	61.	59.	53.	44.	32.	19.	6.	0.	0.	782.	131.	169.	107.	127.	131.	169.	107.	127.
EAST	0.	0.	46.	140.	169.	166.	144.	107.	61.	59.	53.	44.	32.	19.	6.	0.	0.	1045.	148.	198.	116.	143.	148.	198.	116.	143.
SOUTHEAST	0.	0.	29.	101.	140.	156.	155.	139.	109.	71.	53.	44.	32.	19.	6.	0.	0.	1054.	148.	199.	116.	144.	148.	199.	116.	144.
HORIZ.	0.	0.	13.	67.	124.	176.	215.	241.	249.	241.	215.	176.	124.	67.	13.	0.	0.	1922.	203.	295.	146.	196.	203.	295.	146.	196.

MONTH	9	HO	2840.	TOH	78.	TOT	76.	KT	.543	KD	.182															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SAT6S SAT6D SAT6S SAT6D				
SOUTH	0.	0.	0.	26.	64.	99.	126.	143.	149.	143.	126.	99.	64.	26.	0.	0.	0.	1063.	151.	206.	112.	140.	151.	206.	112.	140.
SOUTHWEST	0.	0.	0.	13.	26.	38.	47.	85.	121.	148.	162.	161.	139.	88.	0.	0.	0.	1030.	149.	202.	111.	138.	149.	202.	111.	138.
WEST	0.	0.	0.	13.	26.	38.	47.	53.	55.	98.	131.	151.	149.	106.	0.	0.	0.	869.	138.	183.	106.	128.	138.	183.	106.	128.
NORTHWEST	0.	0.	0.	13.	26.	38.	47.	53.	55.	53.	51.	75.	86.	70.	0.	0.	0.	569.	117.	147.	95.	110.	117.	147.	95.	110.
NORTH	0.	0.	0.	13.	26.	38.	47.	53.	55.	53.	47.	38.	26.	13.	0.	0.	0.	411.	106.	128.	90.	101.	106.	128.	90.	101.
NORTHEAST	0.	0.	0.	70.	86.	75.	51.	53.	55.	53.	47.	38.	26.	13.	0.	0.	0.	569.	117.	147.	95.	110.	117.	147.	95.	110.
EAST	0.	0.	0.	106.	149.	151.	131.	98.	55.	53.	47.	38.	26.	13.	0.	0.	0.	869.	138.	183.	106.	128.	138.	183.	106.	128.
SOUTHEAST	0.	0.	0.	88.	139.	161.	162.	148.	121.	85.	47.	38.	26.	13.	0.	0.	0.	1030.	149.	202.	111.	138.	149.	202.	111.	138.
HORIZ.	0.	0.	0.	39.	94.	143.	181.	205.	214.	205.	181.	143.	94.	39.	0.	0.	0.	1541.	183.	264.	128.	169.	183.	264.	128.	169.

LOCATION GRIFFIN, GEORGIA LATITUDE 33 DEGREES 15 MINUTES

MONTH 10 HO 2282. TOD 6A. TOT 65. KT .545 KD .179

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	22.	79.	122.	154.	174.	180.	174.	154.	122.	79.	22.	0.	0.	0.	1283.	157.	230.
SOUTHWEST	0.	0.	0.	0.	6.	19.	31.	57.	102.	142.	170.	184.	179.	147.	55.	0.	0.	1092.	144.	206.
WEST	0.	0.	0.	0.	6.	19.	31.	40.	46.	48.	48.	130.	149.	139.	59.	0.	0.	762.	121.	164.
NORTHWEST	0.	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	50.	62.	31.	0.	0.	421.	97.	121.
NORTH	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	31.	19.	6.	0.	0.	0.	334.	91.	110.
NORTHEAST	0.	0.	0.	31.	62.	50.	40.	46.	48.	46.	40.	31.	19.	6.	0.	0.	0.	421.	97.	121.
EAST	0.	0.	0.	59.	139.	149.	130.	94.	48.	46.	40.	31.	19.	6.	0.	0.	0.	762.	121.	164.
SOUTHEAST	0.	0.	0.	55.	147.	179.	184.	170.	142.	102.	57.	31.	19.	6.	0.	0.	0.	1092.	144.	206.
HORIZ.	0.	0.	0.	15.	68.	120.	160.	185.	194.	185.	160.	120.	68.	15.	0.	0.	0.	1290.	158.	231.

MONTH 11 HO 1783. TOD 57. TOT 54. KT .545 KD .182

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	1.	74.	126.	160.	180.	187.	180.	160.	126.	74.	1.	0.	0.	0.	1267.	153.	232.
SOUTHWEST	0.	0.	0.	1.	13.	24.	33.	39.	41.	42.	114.	128.	105.	1.	0.	0.	0.	995.	133.	194.
WEST	0.	0.	0.	1.	13.	24.	33.	39.	41.	39.	33.	26.	34.	1.	0.	0.	0.	580.	101.	137.
NORTHWEST	0.	0.	0.	1.	13.	24.	33.	39.	41.	39.	33.	24.	13.	1.	0.	0.	0.	282.	79.	96.
NORTH	0.	0.	0.	1.	13.	24.	33.	39.	41.	39.	33.	24.	13.	1.	0.	0.	0.	258.	77.	93.
NORTHEAST	0.	0.	0.	1.	34.	26.	33.	39.	41.	39.	33.	24.	13.	1.	0.	0.	0.	282.	79.	96.
EAST	0.	0.	0.	1.	105.	128.	114.	82.	41.	39.	33.	24.	13.	1.	0.	0.	0.	580.	101.	137.
SOUTHEAST	0.	0.	0.	1.	121.	169.	180.	170.	144.	107.	65.	24.	13.	1.	0.	0.	0.	995.	133.	194.
HORIZ.	0.	0.	0.	1.	40.	88.	126.	150.	159.	150.	126.	88.	40.	1.	0.	0.	0.	971.	131.	191.

MONTH 12 HO 1589. TOD 49. TOT 47. KT .487 KD .187

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	0.	59.	108.	139.	157.	163.	157.	139.	108.	59.	0.	0.	0.	0.	1090.	135.	205.
SOUTHWEST	0.	0.	0.	0.	10.	24.	61.	96.	126.	147.	153.	141.	91.	0.	0.	0.	0.	849.	116.	171.
WEST	0.	0.	0.	0.	10.	21.	29.	35.	37.	70.	95.	103.	76.	0.	0.	0.	0.	475.	87.	117.
NORTHWEST	0.	0.	0.	0.	10.	21.	29.	35.	37.	35.	29.	21.	22.	0.	0.	0.	0.	238.	68.	83.
NORTH	0.	0.	0.	0.	10.	21.	29.	35.	37.	35.	29.	21.	10.	0.	0.	0.	0.	226.	67.	82.
NORTHEAST	0.	0.	0.	0.	22.	21.	29.	35.	37.	35.	29.	21.	10.	0.	0.	0.	0.	238.	68.	83.
EAST	0.	0.	0.	0.	76.	103.	95.	70.	37.	35.	29.	21.	10.	0.	0.	0.	0.	475.	87.	117.
SOUTHEAST	0.	0.	0.	0.	91.	141.	153.	147.	126.	96.	61.	24.	10.	0.	0.	0.	0.	849.	116.	171.
HORIZ.	0.	0.	0.	0.	28.	69.	102.	123.	130.	123.	102.	69.	28.	0.	0.	0.	0.	774.	110.	160.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	137.	131.	126.	121.	119.	121.	126.	138.	151.	157.	153.	135.	135.
SOUTHWEST	119.	120.	124.	131.	136.	137.	140.	148.	149.	144.	133.	116.	133.
WEST	91.	101.	114.	130.	143.	147.	147.	148.	138.	121.	101.	87.	122.
NORTHWEST	70.	80.	95.	114.	131.	138.	136.	131.	117.	97.	79.	64.	105.
NORTH	68.	74.	85.	97.	113.	121.	120.	114.	106.	91.	77.	67.	95.
NORTHEAST	70.	80.	95.	114.	131.	138.	136.	131.	117.	97.	79.	68.	105.
EAST	91.	101.	114.	130.	143.	147.	147.	148.	138.	121.	101.	87.	122.
SOUTHEAST	119.	120.	124.	131.	136.	137.	140.	148.	149.	144.	133.	116.	133.
HORIZ.	119.	134.	156.	182.	204.	207.	203.	203.	183.	158.	131.	110.	166.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	209.	197.	181.	165.	153.	151.	158.	182.	206.	230.	232.	205.	189.
SOUTHWEST	176.	177.	177.	183.	182.	180.	184.	199.	202.	206.	194.	171.	186.
WEST	125.	141.	159.	182.	196.	197.	196.	198.	183.	164.	137.	117.	166.
NORTHWEST	87.	104.	125.	153.	174.	181.	177.	169.	147.	121.	96.	83.	135.
NORTH	84.	93.	107.	122.	142.	152.	148.	139.	128.	110.	93.	82.	117.
NORTHEAST	87.	104.	125.	153.	174.	181.	177.	169.	147.	121.	96.	83.	135.
EAST	125.	141.	159.	182.	196.	197.	196.	198.	183.	164.	137.	117.	166.
SOUTHEAST	176.	177.	177.	183.	182.	180.	184.	199.	202.	206.	194.	171.	186.
HORIZ.	175.	202.	234.	277.	303.	303.	296.	295.	264.	231.	191.	160.	244.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	85.	86.	89.	93.	97.	103.	106.	110.	112.	106.	94.	82.	97.
SOUTHWEST	77.	81.	88.	98.	107.	112.	114.	116.	111.	100.	86.	75.	97.
WEST	65.	72.	83.	98.	111.	118.	118.	116.	106.	89.	72.	63.	93.
NORTHWEST	56.	62.	74.	89.	104.	113.	112.	107.	95.	78.	63.	55.	84.
NORTH	56.	60.	69.	80.	93.	103.	102.	97.	90.	73.	62.	55.	78.
NORTHEAST	56.	62.	74.	89.	104.	113.	112.	107.	95.	78.	63.	55.	84.
EAST	65.	72.	83.	98.	111.	118.	118.	116.	106.	89.	72.	63.	93.
SOUTHEAST	77.	81.	88.	98.	107.	112.	114.	116.	111.	100.	86.	75.	97.
HORIZ.	77.	87.	104.	126.	146.	153.	151.	146.	128.	106.	85.	72.	115.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	115.	116.	116.	116.	117.	120.	124.	134.	140.	139.	128.	111.	123.
SOUTHWEST	101.	107.	115.	126.	134.	138.	139.	144.	138.	128.	112.	97.	123.
WEST	79.	91.	106.	126.	142.	148.	146.	143.	128.	109.	88.	75.	115.
NORTHWEST	64.	73.	89.	110.	129.	138.	135.	127.	110.	89.	70.	61.	100.
NORTH	62.	68.	80.	93.	110.	121.	119.	111.	101.	84.	69.	61.	90.
NORTHEAST	64.	73.	89.	110.	129.	138.	135.	127.	110.	89.	70.	61.	100.
EAST	79.	91.	106.	126.	142.	148.	146.	143.	128.	109.	88.	75.	115.
SOUTHEAST	101.	107.	115.	126.	134.	138.	139.	144.	138.	128.	112.	97.	123.
HORIZ.	101.	119.	143.	178.	203.	210.	204.	196.	169.	140.	110.	93.	156.



LATITUDE 35 DEGREES 13 MINUTES

LOCATION HATTERAS, N.C.

MONTH	1	HO	1690.	TOD	50.	TOT	48.	KT	546	KD	.182													
ORIENTATION																								
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY		
																		SATGS	SAT6D	SATGS	SAT6D			
SOUTH	0.	0.	0.	0.	72.	126.	161.	182.	189.	182.	161.	126.	72.	0.	0.	0.	0.	148.	227.	1273.	148.	227.	89.	122.
SOUTHWEST	0.	0.	0.	0.	0.	11.	23.	65.	109.	145.	171.	181.	169.	118.	0.	0.	0.	126.	188.	993.	126.	188.	80.	106.
WEST	0.	0.	0.	0.	0.	11.	23.	31.	37.	39.	81.	113.	127.	102.	0.	0.	0.	93.	129.	564.	93.	129.	66.	81.
NORTHWEST	0.	0.	0.	0.	0.	11.	23.	31.	37.	39.	37.	31.	23.	32.	0.	0.	0.	70.	87.	266.	70.	87.	57.	63.
NORTH	0.	0.	0.	0.	0.	11.	23.	31.	37.	39.	37.	31.	23.	11.	0.	0.	0.	69.	84.	244.	69.	84.	56.	62.
NORTHEAST	0.	0.	0.	0.	0.	32.	23.	31.	37.	39.	37.	31.	23.	11.	0.	0.	0.	70.	87.	266.	70.	87.	57.	63.
EAST	0.	0.	0.	0.	0.	102.	127.	113.	81.	39.	37.	31.	23.	11.	0.	0.	0.	93.	129.	564.	93.	129.	66.	81.
SOUTHEAST	0.	0.	0.	0.	0.	118.	169.	181.	171.	145.	109.	65.	23.	11.	0.	0.	0.	126.	188.	993.	126.	188.	80.	106.
HORIZ.	0.	0.	0.	0.	0.	36.	83.	120.	144.	152.	144.	120.	83.	36.	0.	0.	0.	121.	178.	921.	121.	178.	78.	102.

MONTH	2	HO	2226.	TOD	49.	TOT	48.	KT	563	KD	.179												
ORIENTATION																							
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION					SAG/DAYTIME SAG/ALL DAY	
																		SATGS	SATGD	SATGS	SATGD		
SOUTH	0.	0.	0.	23.	80.	124.	156.	176.	182.	176.	156.	124.	80.	23.	0.	0.	0.	1299.	140.	215.	89.	123.	
SOUTHWEST	0.	0.	0.	6.	19.	30.	58.	104.	143.	171.	185.	180.	149.	56.	0.	0.	0.	1101.	127.	189.	83.	112.	
WEST	0.	0.	0.	6.	19.	30.	39.	45.	47.	93.	129.	149.	140.	60.	0.	0.	0.	758.	103.	146.	72.	92.	
NORTHWEST	0.	0.	0.	6.	19.	30.	39.	45.	47.	45.	39.	48.	61.	32.	0.	0.	0.	412.	78.	102.	61.	72.	
NORTH	0.	0.	0.	6.	19.	30.	39.	45.	47.	45.	39.	30.	19.	6.	0.	0.	0.	326.	72.	91.	58.	67.	
NORTHEAST	0.	0.	0.	32.	61.	48.	39.	45.	47.	45.	39.	30.	19.	6.	0.	0.	0.	412.	78.	102.	61.	72.	
EAST	0.	0.	0.	60.	140.	149.	129.	93.	47.	45.	39.	30.	19.	6.	0.	0.	0.	758.	103.	146.	72.	92.	
SOUTHEAST	0.	0.	0.	56.	149.	180.	185.	171.	143.	104.	58.	30.	19.	6.	0.	0.	0.	1101.	127.	189.	83.	112.	
HORIZ.	0.	0.	0.	14.	66.	116.	155.	180.	189.	180.	155.	116.	66.	14.	0.	0.	0.	1254.	137.	209.	88.	121.	

MONTH	3	HO	2793.	TOD	55.	TOT	53.	KT	.593	KD	.175																
ORIENTATION																											
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY						
												HOURLY SOLAR RADIATION								SATGS		SATGD		SATGS		SATGD	
SOUTH	0.	0.	0.	30.	74.	113.	144.	164.	170.	164.	144.	113.	74.	30.	0.	0.	0.	1220.	133.	196.	92.	124.					
SOUTHWEST	0.	0.	0.	13.	26.	38.	47.	95.	137.	168.	185.	185.	162.	105.	0.	0.	0.	1160.	129.	190.	90.	120.					
WEST	0.	0.	0.	13.	26.	38.	47.	53.	55.	105.	145.	170.	171.	127.	0.	0.	0.	950.	115.	165.	83.	108.					
NORTHWEST	0.	0.	0.	13.	26.	38.	47.	53.	55.	53.	48.	78.	95.	81.	0.	0.	0.	587.	92.	123.	72.	87.					
NORTH	0.	0.	0.	13.	26.	38.	47.	53.	55.	53.	47.	38.	26.	13.	0.	0.	0.	409.	81.	102.	66.	77.					
NORTHEAST	0.	0.	0.	81.	95.	78.	48.	53.	55.	53.	47.	38.	26.	13.	0.	0.	0.	587.	92.	123.	72.	87.					
EAST	0.	0.	0.	127.	171.	170.	145.	105.	55.	53.	47.	38.	26.	13.	0.	0.	0.	950.	115.	165.	83.	108.					
SOUTHEAST	0.	0.	0.	105.	162.	185.	185.	168.	137.	95.	47.	38.	26.	13.	0.	0.	0.	1160.	129.	190.	90.	120.					
HORIZ.	0.	0.	0.	42.	101.	154.	195.	221.	230.	221.	195.	154.	101.	42.	0.	0.	0.	1655.	161.	247.	106.	149.					

LOCATION:		HATTERAS, N.C.		LATITUDE		35 DEGREES		13 MINUTES										
MONTH	4	HO	3320.	TOD	61.	TOT	60.	KT	.655	KT	.160							
ORIENTATION		HOURLY SOLAR RADIATION																
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	6.	19.	55.	95.	126.	146.	153.	146.	126.	95.	55.	19.	6.	0.	0.
SOUTHWEST	0.	0.	6.	19.	32.	44.	53.	70.	126.	143.	184.	184.	170.	127.	42.	0.	0.	0.
WEST	0.	0.	6.	19.	32.	44.	53.	58.	60.	118.	165.	196.	204.	175.	68.	0.	0.	0.
NORTHWEST	0.	0.	6.	19.	32.	44.	53.	58.	60.	58.	80.	116.	138.	132.	57.	0.	0.	0.
NORTH	0.	0.	16.	23.	32.	44.	53.	58.	60.	58.	53.	44.	32.	23.	16.	0.	0.	0.
NORTHEAST	0.	0.	57.	132.	138.	116.	80.	58.	60.	58.	53.	44.	32.	19.	6.	0.	0.	0.
EAST	0.	0.	68.	175.	204.	196.	165.	118.	60.	58.	53.	44.	32.	19.	6.	0.	0.	0.
SOUTHEAST	0.	0.	42.	127.	170.	188.	184.	163.	126.	79.	53.	44.	32.	19.	6.	0.	0.	0.
HORIZ.	0.	0.	16.	77.	141.	199.	243.	271.	281.	271.	243.	199.	141.	77.	16.	0.	0.	0.
		DAILY TOTAL RADIATION										SAG/DAYTIME SATGS		SAG/ALL DAY SATGS				
												1048.	123.	173.	93.	121.	93.	121.
												1231.	134.	192.	99.	131.	99.	131.
												1198.	132.	189.	98.	129.	98.	129.
												853.	111.	152.	87.	109.	87.	109.
												513.	92.	116.	76.	89.	76.	89.
												853.	111.	152.	87.	109.	87.	109.
												1198.	132.	189.	98.	129.	98.	129.
												1231.	134.	192.	99.	131.	99.	131.
												2175.	189.	293.	129.	186.	129.	186.
MONTH	5	HO	3633.	TOD	70.	TOT	68.	KT	.661	KT	.159							
ORIENTATION		HOURLY SOLAR RADIATION																
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	10.	23.	36.	36.	69.	98.	117.	124.	117.	98.	69.	36.	23.	10.	0.	0.
SOUTHWEST	0.	0.	10.	23.	36.	47.	55.	61.	106.	141.	162.	167.	153.	119.	61.	0.	0.	0.
WEST	0.	0.	10.	23.	36.	47.	55.	61.	62.	118.	164.	195.	204.	184.	112.	0.	0.	0.
NORTHWEST	0.	0.	10.	23.	36.	47.	55.	61.	62.	61.	102.	136.	157.	155.	104.	0.	0.	0.
NORTH	0.	0.	41.	49.	38.	47.	55.	61.	62.	61.	55.	47.	38.	49.	41.	0.	0.	0.
NORTHEAST	0.	0.	104.	155.	157.	136.	102.	61.	62.	61.	55.	47.	36.	23.	10.	0.	0.	0.
EAST	0.	0.	112.	184.	204.	195.	164.	118.	62.	61.	55.	47.	36.	23.	10.	0.	0.	0.
SOUTHEAST	0.	0.	61.	119.	153.	167.	162.	141.	106.	61.	55.	47.	36.	23.	10.	0.	0.	0.
HORIZ.	0.	0.	35.	98.	161.	216.	258.	285.	295.	285.	258.	216.	161.	98.	35.	0.	0.	0.
		DAILY TOTAL RADIATION										SAG/DAYTIME SATGS		SAG/ALL DAY SATGS				
												832.	119.	156.	97.	118.	97.	118.
												1142.	137.	188.	107.	137.	107.	137.
												1271.	144.	201.	112.	145.	112.	145.
												1009.	129.	174.	103.	129.	103.	129.
												644.	108.	137.	90.	107.	90.	107.
												1009.	129.	174.	103.	129.	103.	129.
												1271.	144.	201.	112.	145.	112.	145.
												1142.	137.	188.	107.	137.	107.	137.
												2401.	211.	318.	150.	213.	150.	213.
MONTH	6	HO	3741.	TOD	77.	TOT	76.	KT	.652	KT	.161							
ORIENTATION		HOURLY SOLAR RADIATION																
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	1.	12.	25.	37.	59.	86.	104.	110.	104.	86.	59.	37.	25.	12.	1.	0.	0.
SOUTHWEST	0.	1.	12.	25.	37.	48.	56.	61.	96.	130.	150.	155.	142.	111.	61.	2.	0.	0.
WEST	0.	1.	12.	25.	37.	48.	56.	61.	63.	116.	159.	189.	198.	180.	119.	2.	0.	0.
NORTHWEST	0.	1.	12.	25.	37.	48.	56.	61.	63.	70.	108.	140.	160.	158.	114.	2.	0.	0.
NORTH	0.	2.	50.	58.	49.	48.	56.	61.	63.	61.	56.	48.	49.	58.	50.	2.	0.	0.
NORTHEAST	0.	2.	114.	158.	160.	140.	108.	70.	63.	61.	56.	48.	37.	25.	12.	1.	0.	0.
EAST	0.	2.	119.	180.	198.	189.	159.	116.	63.	61.	56.	48.	37.	25.	12.	1.	0.	0.
SOUTHEAST	0.	2.	61.	111.	142.	155.	150.	130.	96.	61.	56.	48.	37.	25.	12.	1.	0.	0.
HORIZ.	0.	2.	43.	103.	164.	217.	258.	284.	293.	284.	258.	217.	164.	103.	43.	2.	0.	0.
		DAILY TOTAL RADIATION										SAG/DAYTIME SATGS		SAG/ALL DAY SATGS				
												759.	121.	154.	102.	121.	102.	121.
												1089.	139.	187.	113.	141.	113.	141.
												1268.	150.	205.	119.	152.	119.	152.
												1056.	138.	184.	112.	139.	112.	139.
												712.	118.	149.	100.	119.	100.	119.
												1056.	138.	184.	112.	139.	112.	139.
												1268.	150.	205.	119.	152.	119.	152.
												1089.	139.	187.	113.	141.	113.	141.
												2439.	216.	323.	159.	223.	159.	223.

LOCATION		HATTERAS, N.C.		LATITUDE		35 DEGREES		13 MINUTES													
MONTH	7	H0	3628.	TOD	80.	TOT	78.	KT	.634	KD	.166										
ORIENTATION																					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION									
SOUTH	0.	0.	11.	24.	36.	47.	55.	61.	113.	113.	95.	67.	36.	24.	11.	0.	808.	127.	164.	106.	127.
SOUTHWEST	0.	0.	11.	24.	36.	47.	55.	61.	102.	135.	155.	158.	144.	111.	56.	0.	1095.	144.	193.	116.	145.
WEST	0.	0.	11.	24.	36.	47.	55.	61.	63.	114.	156.	184.	192.	171.	102.	0.	1216.	151.	206.	120.	152.
NORTHWEST	0.	0.	11.	24.	36.	47.	55.	61.	63.	62.	99.	130.	148.	145.	95.	0.	974.	137.	181.	112.	137.
NORTH	0.	0.	38.	47.	39.	47.	55.	61.	63.	61.	55.	47.	39.	47.	38.	0.	638.	117.	146.	100.	117.
NORTHEAST	0.	0.	95.	145.	148.	130.	99.	62.	63.	61.	55.	47.	36.	24.	11.	0.	974.	137.	181.	112.	137.
EAST	0.	0.	102.	171.	192.	184.	156.	114.	63.	61.	55.	47.	36.	24.	11.	0.	1216.	151.	206.	120.	152.
SOUTHEAST	0.	0.	56.	111.	144.	158.	155.	135.	102.	61.	55.	47.	36.	24.	11.	0.	1095.	144.	193.	116.	145.
HORIZ.	0.	0.	34.	93.	154.	207.	247.	273.	282.	273.	247.	207.	154.	93.	34.	0.	2300.	214.	318.	157.	217.

MONTH		8		H0		3295.		TOD		80.		TOT		78.		KT		.619		KD		.169	
ORIENTATION																							
HOURLY SOLAR RADIATION																							
4		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION					
SOUTH		0.	0.	6.	19.	52.	89.	119.	138.	144.	138.	119.	89.	52.	19.	6.	0.	990.	142.	189.	112.	138.	
SOUTHWEST		0.	0.	6.	19.	32.	44.	53.	76.	120.	153.	171.	173.	155.	113.	35.	0.	1149.	151.	206.	118.	148.	
WEST		0.	0.	6.	19.	32.	44.	53.	58.	60.	112.	154.	181.	186.	155.	55.	0.	1115.	149.	203.	116.	146.	
NORTHWEST		0.	0.	6.	19.	32.	44.	53.	58.	60.	58.	78.	109.	126.	118.	47.	0.	807.	130.	169.	106.	127.	
NORTH		0.	0.	14.	23.	32.	44.	53.	58.	60.	58.	53.	44.	32.	23.	14.	0.	508.	111.	136.	96.	109.	
NORTHEAST		0.	0.	47.	118.	126.	109.	78.	58.	60.	58.	53.	44.	32.	19.	6.	0.	807.	130.	169.	106.	127.	
EAST		0.	0.	55.	155.	186.	181.	154.	112.	60.	58.	53.	44.	32.	19.	6.	0.	1115.	149.	203.	116.	146.	
SOUTHEAST		0.	0.	35.	113.	155.	173.	171.	153.	120.	76.	53.	44.	32.	19.	6.	0.	1149.	151.	206.	118.	148.	
HORIZ.		0.	0.	15.	71.	132.	186.	228.	255.	264.	255.	228.	186.	132.	71.	15.	0.	2040.	207.	305.	148.	202.	

MONTH		9	H0		2777.	TOD		77.	TOT		75.	KT		.605	KD		.173					
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
		HOURLY SOLAR RADIATION																				
		DAILY TOTAL RADIATION																				
		SAG/DAYTIME SATGD																				
		SAG/ALL DAY SATGD																				
SOUTH	0.	0.	0.	0.	29.	73.	114.	146.	166.	173.	166.	146.	114.	73.	29.	0.	0.	1229.	160.	224.	117.	150.
SOUTHWEST	0.	0.	0.	0.	12.	26.	38.	47.	95.	138.	171.	188.	187.	163.	102.	0.	0.	1168.	156.	217.	115.	146.
WEST	0.	0.	0.	0.	12.	26.	38.	47.	53.	55.	106.	148.	173.	172.	123.	0.	0.	953.	142.	191.	108.	133.
NORTHWEST	0.	0.	0.	0.	12.	26.	38.	47.	53.	55.	53.	48.	79.	96.	79.	0.	0.	586.	117.	147.	95.	111.
NORTH	0.	0.	0.	0.	12.	26.	38.	47.	53.	55.	53.	47.	38.	26.	12.	0.	0.	407.	104.	126.	89.	100.
NORTHEAST	0.	0.	0.	0.	79.	96.	79.	48.	53.	55.	53.	47.	38.	26.	12.	0.	0.	586.	117.	147.	95.	111.
EAST	0.	0.	0.	123.	172.	173.	148.	106.	55.	53.	47.	38.	26.	12.	0.	0.	0.	953.	142.	191.	108.	133.
SOUTHEAST	0.	0.	0.	0.	102.	163.	187.	188.	171.	138.	95.	47.	38.	26.	12.	0.	0.	1168.	156.	217.	115.	146.
HORIZ.	0.	0.	0.	0.	41.	101.	156.	198.	225.	234.	225.	198.	156.	101.	41.	0.	0.	1679.	191.	279.	133.	177.

LOCATION		HATTERAS, N.C.										LATITUDE 35 DEGREES 13 MINUTES															
MONTH	10	HO	2191.	TOD	6A.	TOT	66.	KT	.580	KD	.177																
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION			SAG/DAYTIME SATGS SATGD SATGS SATGD			SAG/ALL DAY SATGS SATGD		
SOUTH		0.	0.	0.	20.	81.	128.	162.	183.	190.	183.	162.	128.	81.	20.	0.	0.	0.	1338.	162.	238.	109.	144.	162.	238.	109.	144.
SOUTHWEST		0.	0.	0.	5.	18.	30.	60.	107.	148.	178.	192.	186.	150.	50.	0.	0.	0.	1124.	147.	211.	102.	132.	147.	211.	102.	132.
WEST		0.	0.	0.	5.	18.	30.	39.	45.	47.	95.	133.	153.	142.	53.	0.	0.	0.	759.	121.	165.	91.	111.	121.	165.	91.	111.
NORTHWEST		0.	0.	0.	5.	18.	30.	39.	45.	47.	45.	39.	48.	61.	28.	0.	0.	0.	405.	96.	120.	79.	90.	96.	120.	79.	90.
NORTH		0.	0.	0.	5.	18.	30.	39.	45.	47.	45.	39.	30.	18.	5.	0.	0.	0.	322.	90.	109.	77.	85.	90.	109.	77.	85.
NORTHEAST		0.	0.	0.	28.	61.	48.	39.	45.	47.	45.	39.	30.	18.	5.	0.	0.	0.	405.	96.	120.	79.	90.	96.	120.	79.	90.
EAST		0.	0.	0.	53.	142.	153.	133.	95.	47.	45.	39.	30.	18.	5.	0.	0.	0.	759.	121.	165.	91.	111.	121.	165.	91.	111.
SOUTHEAST		0.	0.	0.	50.	150.	186.	192.	178.	148.	107.	60.	30.	18.	5.	0.	0.	0.	1124.	147.	211.	102.	132.	147.	211.	102.	132.
HORIZ.		0.	0.	0.	13.	66.	118.	158.	184.	193.	184.	158.	118.	66.	13.	0.	0.	0.	1271.	157.	230.	107.	140.	157.	230.	107.	140.
MONTH 11		HO	1678.	TOD	59.	TOT	57.	KT	.566	KD	.179																
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION			SAG/DAYTIME SATGS SATGD SATGS SATGD			SAG/ALL DAY SATGS SATGD		
SOUTH		0.	0.	0.	0.	74.	132.	169.	192.	199.	192.	169.	132.	74.	0.	0.	0.	0.	1333.	162.	245.	100.	135.	162.	245.	100.	135.
SOUTHWEST		0.	0.	0.	0.	11.	23.	68.	113.	152.	180.	190.	177.	121.	0.	0.	0.	0.	1035.	139.	204.	91.	118.	139.	204.	91.	118.
WEST		0.	0.	0.	0.	11.	23.	31.	37.	39.	84.	118.	132.	104.	0.	0.	0.	0.	579.	104.	140.	76.	91.	104.	140.	76.	91.
NORTHWEST		0.	0.	0.	0.	11.	23.	31.	37.	39.	37.	31.	23.	33.	0.	0.	0.	0.	265.	79.	96.	66.	73.	79.	96.	66.	73.
NORTH		0.	0.	0.	0.	11.	23.	31.	37.	39.	37.	31.	23.	33.	0.	0.	0.	0.	243.	78.	93.	65.	71.	78.	93.	65.	71.
NORTHEAST		0.	0.	0.	0.	33.	23.	31.	37.	39.	37.	31.	23.	11.	0.	0.	0.	0.	265.	79.	96.	66.	73.	79.	96.	66.	73.
EAST		0.	0.	0.	0.	104.	132.	118.	84.	39.	37.	31.	23.	11.	0.	0.	0.	0.	579.	104.	140.	76.	91.	104.	140.	76.	91.
SOUTHEAST		0.	0.	0.	0.	121.	177.	190.	180.	152.	113.	68.	23.	11.	0.	0.	0.	0.	1035.	139.	204.	91.	118.	139.	204.	91.	118.
HORIZ.		0.	0.	0.	0.	37.	85.	124.	149.	158.	149.	124.	85.	37.	0.	0.	0.	0.	948.	132.	191.	88.	113.	132.	191.	88.	113.
MONTH 12		HO	1480.	TOD	51.	TOT	49.	KT	.535	KD	.183																
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION			SAG/DAYTIME SATGS SATGD SATGS SATGD			SAG/ALL DAY SATGS SATGD		
SOUTH		0.	0.	0.	0.	61.	122.	159.	181.	188.	181.	159.	122.	61.	0.	0.	0.	0.	1235.	150.	231.	89.	121.	150.	231.	89.	121.
SOUTHWEST		0.	0.	0.	0.	9.	25.	67.	108.	144.	168.	175.	159.	95.	0.	0.	0.	0.	949.	127.	189.	80.	105.	127.	189.	80.	105.
WEST		0.	0.	0.	0.	9.	19.	28.	34.	35.	75.	105.	115.	79.	0.	0.	0.	0.	499.	91.	124.	66.	79.	91.	124.	66.	79.
NORTHWEST		0.	0.	0.	0.	9.	19.	28.	34.	35.	34.	28.	19.	21.	0.	0.	0.	0.	228.	70.	84.	57.	63.	70.	84.	57.	63.
NORTH		0.	0.	0.	0.	9.	19.	28.	34.	35.	34.	28.	19.	9.	0.	0.	0.	0.	215.	68.	82.	56.	63.	68.	82.	56.	63.
NORTHEAST		0.	0.	0.	0.	21.	19.	28.	34.	35.	34.	28.	19.	9.	0.	0.	0.	0.	228.	70.	84.	57.	63.	70.	84.	57.	63.
EAST		0.	0.	0.	0.	79.	115.	105.	75.	35.	34.	28.	19.	9.	0.	0.	0.	0.	499.	91.	124.	66.	79.	91.	124.	66.	79.
SOUTHEAST		0.	0.	0.	0.	95.	159.	175.	168.	144.	108.	67.	25.	9.	0.	0.	0.	0.	949.	127.	189.	80.	105.	127.	189.	80.	105.
HORIZ.		0.	0.	0.	0.	25.	69.	105.	129.	137.	129.	105.	69.	25.	0.	0.	0.	0.	793.	115.	167.	75.	96.	115.	167.	75.	96.



## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	148.	140.	133.	123.	119.	121.	127.	142.	160.	162.	162.	150.	140.
SOUTHWEST	126.	127.	129.	134.	137.	139.	144.	151.	156.	147.	139.	127.	138.
WEST	93.	103.	115.	132.	144.	150.	151.	149.	142.	121.	104.	91.	125.
NORTHWEST	70.	78.	92.	111.	129.	138.	137.	130.	117.	96.	79.	70.	104.
NORTH	69.	72.	81.	92.	108.	117.	117.	111.	104.	90.	78.	68.	92.
NORTHEAST	70.	78.	92.	111.	129.	138.	137.	130.	117.	96.	79.	70.	104.
EAST	93.	103.	115.	132.	144.	150.	151.	149.	142.	121.	104.	91.	125.
SOUTHEAST	126.	127.	129.	134.	137.	139.	144.	148.	156.	147.	139.	127.	138.
HORIZ.	121.	137.	161.	189.	211.	216.	214.	207.	191.	157.	132.	115.	171.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	227.	215.	196.	173.	156.	154.	164.	189.	224.	238.	245.	231.	201.
SOUTHWEST	188.	189.	190.	192.	188.	187.	193.	206.	217.	211.	204.	189.	196.
WEST	129.	146.	165.	189.	201.	205.	206.	203.	191.	165.	140.	124.	172.
NORTHWEST	87.	102.	123.	152.	174.	184.	181.	174.	147.	120.	96.	84.	135.
NORTH	84.	91.	102.	116.	137.	149.	146.	136.	126.	109.	93.	82.	114.
NORTHEAST	87.	102.	123.	152.	174.	184.	181.	169.	147.	120.	96.	84.	135.
EAST	129.	146.	165.	189.	201.	205.	206.	203.	191.	165.	140.	124.	172.
SOUTHEAST	188.	189.	190.	192.	188.	187.	193.	206.	217.	211.	204.	189.	196.
HORIZ.	178.	209.	247.	293.	318.	323.	318.	305.	279.	230.	191.	167.	255.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	89.	89.	92.	93.	97.	102.	106.	112.	117.	109.	100.	89.	100.
SOUTHWEST	80.	83.	90.	99.	107.	113.	116.	118.	115.	102.	91.	80.	99.
WEST	66.	72.	83.	98.	112.	119.	120.	116.	108.	91.	76.	66.	94.
NORTHWEST	57.	61.	72.	87.	103.	112.	112.	106.	95.	79.	66.	57.	84.
NORTH	56.	58.	66.	76.	90.	100.	100.	96.	89.	77.	65.	56.	77.
NORTHEAST	57.	61.	72.	87.	103.	112.	112.	106.	95.	79.	66.	57.	84.
EAST	66.	72.	83.	98.	112.	119.	120.	116.	108.	91.	76.	66.	94.
SOUTHEAST	80.	83.	90.	99.	107.	113.	116.	118.	115.	102.	91.	80.	99.
HORIZ.	78.	88.	106.	129.	150.	159.	157.	148.	133.	107.	88.	75.	118.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	122.	123.	124.	121.	118.	121.	127.	138.	150.	144.	135.	121.	129.
SOUTHWEST	106.	112.	120.	131.	145.	141.	145.	148.	146.	132.	118.	105.	128.
WEST	81.	92.	108.	129.	145.	152.	152.	146.	133.	111.	91.	79.	118.
NORTHWEST	63.	72.	87.	109.	129.	139.	137.	127.	111.	90.	73.	63.	100.
NORTH	62.	67.	77.	89.	107.	117.	117.	109.	100.	85.	71.	62.	89.
NORTHEAST	63.	72.	87.	109.	129.	139.	137.	127.	111.	90.	73.	63.	100.
EAST	81.	92.	108.	129.	145.	152.	152.	146.	133.	111.	91.	79.	118.
SOUTHEAST	106.	112.	120.	131.	145.	141.	145.	148.	146.	132.	118.	105.	128.
HORIZ.	102.	121.	149.	186.	213.	223.	217.	202.	177.	140.	113.	96.	162.

LOCATION	INDIANAPOLIS, INDIANA	LATITUDE	39 DEGREES	44 MINUTES													
MONTH	1	H0	1444.	T00	31.	T01	29.	KT	30.	KD	18	19	20				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	36.	74.	98.	112.	117.	112.	98.	74.	36.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	8.	18.	45.	71.	92.	105.	108.	96.	56.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	8.	17.	24.	29.	30.	53.	69.	72.	49.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	8.	17.	24.	29.	30.	29.	24.	17.	17.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	8.	17.	24.	29.	30.	29.	24.	17.	8.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	17.	17.	24.	29.	30.	29.	24.	17.	8.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	49.	72.	69.	53.	30.	29.	24.	17.	8.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	56.	96.	108.	105.	92.	71.	45.	18.	8.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	19.	49.	73.	88.	93.	88.	73.	49.	19.	0.	0.	0.	0.
MONTH	2	H0	2009.	T00	34.	T01	31.	KT	30.	KD	18	19	20				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	12.	54.	87.	111.	126.	131.	126.	111.	87.	54.	12.	0.	0.	0.
SOUTHWEST	0.	0.	0.	4.	15.	25.	49.	70.	104.	121.	128.	121.	85.	26.	0.	0.	0.
WEST	0.	0.	0.	4.	15.	25.	33.	38.	40.	68.	89.	90.	88.	27.	0.	0.	0.
NORTHWEST	0.	0.	0.	4.	15.	25.	33.	38.	40.	38.	33.	34.	39.	15.	0.	0.	0.
NORTH	0.	0.	0.	4.	15.	25.	33.	38.	40.	38.	33.	25.	15.	4.	0.	0.	0.
NORTHEAST	0.	0.	0.	15.	39.	34.	33.	38.	40.	38.	33.	25.	15.	4.	0.	0.	0.
EAST	0.	0.	0.	27.	88.	99.	89.	68.	40.	38.	33.	25.	15.	4.	0.	0.	0.
SOUTHEAST	0.	0.	0.	26.	95.	121.	128.	121.	104.	79.	49.	25.	15.	4.	0.	0.	0.
HORIZ.	0.	0.	0.	9.	44.	79.	106.	123.	129.	123.	106.	79.	44.	9.	0.	0.	0.
MONTH	3	H0	2632.	T00	43.	T01	40.	KT	30.	KD	18	19	20				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	24.	59.	91.	116.	132.	137.	132.	116.	91.	59.	24.	0.	0.	0.
SOUTHWEST	0.	0.	0.	12.	24.	34.	47.	82.	111.	132.	142.	138.	118.	74.	0.	0.	0.
WEST	0.	0.	0.	12.	24.	34.	42.	47.	49.	83.	109.	124.	122.	88.	0.	0.	0.
NORTHWEST	0.	0.	0.	12.	24.	34.	42.	47.	49.	47.	42.	58.	68.	56.	0.	0.	0.
NORTH	0.	0.	0.	12.	24.	34.	42.	47.	49.	47.	42.	34.	24.	12.	0.	0.	0.
NORTHEAST	0.	0.	0.	56.	68.	58.	42.	47.	49.	47.	42.	34.	24.	12.	0.	0.	0.
EAST	0.	0.	0.	68.	122.	124.	109.	83.	49.	47.	42.	34.	24.	12.	0.	0.	0.
SOUTHEAST	0.	0.	0.	74.	119.	138.	142.	132.	111.	85.	47.	34.	24.	12.	0.	0.	0.
SORTZ.	0.	0.	0.	33.	76.	115.	146.	165.	171.	165.	146.	115.	76.	33.	0.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS																	
SATGS SATGD																	
SAG/ALL DAY SATGS																	
SATGD SATGD																	
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS																	
SATGS SATGD																	
SAG/ALL DAY SATGS																	
SATGD SATGD																	

LOCATION	INDIANAPOLIS, INDIANA	LATITUDE	39 DEGREES	44 MINUTES
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MONTH	ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SATGS	SATGN	SATGS	SATGN
	SOUTH	0.	0.	7.	19.	49.	77.	99.	113.	118.	113.	99.	77.	49.	19.	7.	0.	0.	847.	103.	143.	78.	100.
	SOUTHWEST	0.	0.	7.	19.	31.	41.	49.	72.	100.	120.	130.	128.	113.	83.	32.	0.	0.	925.	107.	151.	80.	105.
	WEST	0.	0.	7.	19.	31.	41.	49.	54.	55.	88.	113.	128.	130.	110.	49.	0.	0.	872.	104.	145.	79.	102.
	NORTHWEST	0.	0.	7.	19.	31.	41.	49.	54.	55.	54.	59.	77.	88.	83.	41.	0.	0.	657.	92.	123.	72.	89.
	NORTH	0.	0.	14.	19.	31.	41.	49.	54.	55.	54.	49.	41.	31.	19.	14.	0.	0.	469.	81.	103.	66.	78.
	NORTHEAST	0.	0.	41.	83.	88.	77.	59.	54.	55.	54.	49.	41.	31.	19.	7.	0.	0.	657.	92.	123.	72.	89.
	EAST	0.	0.	49.	110.	130.	128.	113.	88.	55.	54.	49.	41.	31.	19.	7.	0.	0.	872.	104.	145.	79.	102.
	SOUTHEAST	0.	0.	32.	83.	113.	128.	130.	120.	100.	72.	49.	41.	31.	19.	7.	0.	0.	925.	107.	151.	80.	105.
	HORIZ.	0.	0.	16.	58.	101.	138.	167.	186.	192.	186.	167.	138.	101.	58.	16.	0.	0.	1524.	142.	214.	100.	140.

MONTH	5	H0	3623.	T00	65.	TOT	61.	KT	.511	KD	.186											
ORIENTATION																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
SOUTH	0.	2.	12.	24.	40.	69.	91.	106.	111.	106.	91.	69.	40.	24.	12.	2.	0.	800.	111.	146.	89.	110.
SOUTHWEST	0.	2.	12.	24.	36.	46.	53.	66.	96.	118.	130.	130.	117.	90.	49.	2.	0.	971.	120.	163.	95.	120.
WEST	0.	2.	12.	24.	36.	46.	53.	58.	60.	95.	124.	142.	145.	130.	85.	2.	0.	1015.	123.	167.	96.	123.
NORTHWEST	0.	2.	12.	24.	36.	46.	53.	58.	60.	58.	76.	97.	110.	108.	79.	2.	0.	822.	112.	148.	90.	111.
NORTH	0.	2.	33.	37.	36.	46.	53.	58.	60.	58.	53.	46.	36.	37.	33.	2.	0.	591.	99.	124.	82.	97.
NORTHEAST	0.	2.	79.	108.	110.	97.	76.	58.	60.	58.	53.	46.	36.	24.	12.	2.	0.	822.	112.	148.	90.	111.
EAST	0.	2.	85.	130.	145.	142.	130.	95.	60.	58.	53.	46.	36.	24.	12.	2.	0.	1015.	123.	167.	96.	123.
SOUTHEAST	0.	2.	49.	90.	117.	130.	118.	118.	96.	66.	53.	46.	36.	24.	12.	2.	0.	971.	120.	163.	95.	120.
ORIZ.	0.	3.	35.	80.	125.	154.	195.	214.	220.	214.	195.	164.	125.	80.	35.	3.	0.	1851.	171.	252.	125.	173.

MONTH	6	H0	3761.	T00	75.	T0T	71.	KT	.543	KD	.182										
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS	SATGS
SOUTH	0.	3.	14.	26.	37.	65.	88.	104.	109.	104.	88.	65.	37.	26.	14.	3.	0.	785.	118.	152.	98.
SOUTHWEST	0.	3.	14.	26.	37.	47.	55.	62.	95.	119.	132.	133.	121.	94.	55.	7.	0.	1002.	130.	173.	106.
WEST	0.	3.	14.	26.	37.	47.	55.	60.	61.	100.	131.	151.	157.	143.	101.	14.	0.	1101.	136.	183.	109.
NORTHWEST	0.	3.	14.	26.	37.	47.	55.	60.	61.	60.	85.	109.	123.	123.	96.	15.	0.	914.	125.	164.	103.
NORTH	0.	9.	43.	46.	39.	47.	55.	60.	61.	60.	55.	47.	39.	46.	43.	9.	0.	660.	111.	139.	94.
NORTHEAST	0.	15.	96.	123.	123.	109.	85.	60.	61.	60.	55.	47.	37.	26.	14.	3.	0.	914.	125.	164.	103.
EAST	0.	14.	101.	143.	157.	151.	131.	100.	61.	60.	55.	47.	37.	26.	14.	3.	0.	1101.	136.	183.	109.
SOUTHEAST	0.	7.	55.	94.	121.	133.	132.	119.	95.	62.	55.	47.	37.	26.	14.	3.	0.	1002.	130.	173.	106.
POULIZ.	0.	6.	44.	92.	135.	179.	211.	231.	236.	231.	211.	179.	138.	92.	44.	6.	0.	2042.	188.	275.	141.

LOCATION		INDIANAPOLIS, INDIANA						LATITUDE		39 DEGREES		44 MINUTES												
MONTH	7	H0	3620.	T0N	80.	T0T	76.	KT	.554	KD	.180													
ORIENTATION		HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY									
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATG5	SATG6	SATG7	SATG8	SATG9	SATG10		
SOUTH	0.	2.	12.	24.	41.	72.	97.	113.	119.	113.	97.	72.	41.	24.	12.	2.	0.	128.	164.	105.	127.			
SOUTHWEST	0.	2.	12.	24.	36.	46.	54.	67.	102.	127.	141.	142.	128.	99.	53.	2.	0.	139.	184.	111.	139.			
WEST	0.	2.	12.	24.	36.	46.	54.	59.	60.	101.	135.	156.	161.	145.	94.	2.	0.	142.	189.	113.	142.			
NORTHWEST	0.	2.	12.	24.	36.	46.	54.	59.	60.	59.	81.	106.	121.	120.	86.	2.	0.	129.	167.	106.	128.			
NORTH	0.	2.	36.	40.	36.	46.	54.	59.	60.	59.	54.	46.	36.	40.	36.	2.	0.	114.	140.	97.	113.			
NORTHEAST	0.	2.	86.	120.	121.	106.	81.	59.	60.	59.	54.	46.	36.	24.	12.	2.	0.	129.	167.	106.	128.			
EAST	0.	2.	94.	145.	161.	156.	135.	101.	60.	59.	54.	46.	36.	24.	12.	2.	0.	142.	189.	113.	142.			
SOUTHEAST	0.	2.	53.	99.	128.	142.	141.	127.	102.	67.	54.	46.	36.	24.	12.	2.	0.	139.	184.	111.	139.			
HORIZ.	0.	3.	37.	86.	135.	178.	212.	233.	240.	233.	212.	178.	135.	86.	37.	3.	0.	194.	281.	145.	197.			

[illegible]

MONTH	9	H0	2619.	T00	71.	T0T	67.	HOURLY SOLAR RADIATION											KT	.549	KD	.1A1	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
								4	5	6	7	8	9	10	11	12	13	14						15	16	17	18
ORIENTATION	SOUTH	0.	0.	0.	27.	69.	107.	138.	157.	163.	157.	138.	107.	69.	27.	0.	0.	0.	1158.	149.	210.	107.	137.				
	SOUTHWEST	0.	0.	0.	12.	24.	35.	49.	93.	130.	158.	171.	167.	143.	87.	0.	0.	0.	1070.	143.	199.	104.	132.				
	WEST	0.	0.	0.	12.	24.	35.	44.	49.	51.	95.	130.	150.	148.	103.	0.	0.	0.	841.	128.	172.	96.	118.				
	NORTHWEST	0.	0.	0.	12.	24.	35.	44.	49.	51.	49.	44.	65.	80.	66.	0.	0.	0.	520.	106.	133.	85.	99.				
	NORTH	0.	0.	0.	12.	24.	35.	44.	49.	51.	49.	44.	35.	24.	12.	0.	0.	0.	380.	96.	116.	80.	90.				
	NORTHEAST	0.	0.	0.	66.	80.	65.	44.	49.	51.	49.	44.	35.	24.	12.	0.	0.	0.	520.	106.	133.	85.	99.				
	EAST	0.	0.	0.	103.	148.	150.	130.	95.	51.	49.	44.	35.	24.	12.	0.	0.	0.	841.	128.	172.	96.	118.				
	SOUTHEAST	0.	0.	0.	87.	143.	167.	171.	158.	130.	93.	49.	35.	24.	12.	0.	0.	0.	1070.	143.	199.	104.	132.				
	HORIZ.	0.	0.	1.	36.	87.	133.	169.	192.	200.	192.	169.	133.	87.	36.	1.	0.	0.	1437.	168.	243.	116.	154.				



LOCATION INDIANAPOLIS, INDIANA LATITUDE 39 DEGREES 44 MINUTES

MONTH 10	HO 1975.	TOD 59.	TOT 56.	HOURLY SOLAR RADIATION												KT .520		KD .185					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY		SAT6S SAT6D SAT6S SAT6D	
SOUTH	0.	0.	0.	12.	68.	112.	144.	164.	171.	164.	144.	112.	68.	12.	0.	0.	0.	1172.	143.	211.	93.	124.	
SOUTHWEST	0.	0.	0.	4.	16.	27.	57.	98.	133.	157.	167.	159.	122.	27.	0.	0.	0.	967.	128.	185.	87.	112.	
WEST	0.	0.	0.	4.	16.	27.	35.	40.	42.	42.	113.	128.	114.	29.	0.	0.	0.	629.	104.	141.	76.	93.	
NORTHWEST	0.	0.	0.	4.	16.	27.	35.	40.	42.	40.	35.	38.	48.	16.	0.	0.	0.	341.	84.	103.	67.	73.	
NORTH	0.	0.	0.	4.	16.	27.	35.	40.	42.	40.	35.	27.	16.	4.	0.	0.	0.	286.	80.	96.	65.	73.	
NORTHEAST	0.	0.	0.	16.	48.	38.	35.	40.	42.	40.	35.	27.	16.	4.	0.	0.	0.	341.	84.	103.	67.	76.	
EAST	0.	0.	0.	29.	114.	128.	113.	82.	42.	40.	35.	27.	16.	4.	0.	0.	0.	629.	104.	141.	76.	93.	
SOUTHEAST	0.	0.	0.	27.	122.	159.	167.	157.	133.	98.	57.	27.	16.	4.	0.	0.	0.	967.	128.	185.	87.	112.	
HORIZ.	0.	0.	0.	8.	51.	95.	129.	151.	158.	151.	129.	95.	51.	8.	0.	0.	0.	1027.	133.	192.	89.	116.	

MONTH 11	HO 1433.	TOD 44.	TOT 41.	HOURLY SOLAR RADIATION										KT .413		KD .184							
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY		SATGS SATGD SATGS SATGD	
SOUTH	0.	0.	0.	0.	39.	82.	110.	127.	132.	127.	110.	82.	39.	0.	0.	0.	0.	848.	112.	167.	69.	91.	
SOUTHWEST	0.	0.	0.	0.	8.	19.	49.	78.	102.	118.	121.	108.	62.	0.	0.	0.	0.	665.	97.	141.	63.	80.	
WEST	0.	0.	0.	0.	8.	17.	25.	30.	31.	58.	76.	80.	53.	0.	0.	0.	0.	378.	74.	99.	54.	63.	
NORTHWEST	0.	0.	0.	0.	8.	17.	25.	30.	31.	30.	25.	17.	18.	0.	0.	0.	0.	200.	60.	73.	48.	53.	
NORTH	0.	0.	0.	0.	8.	17.	25.	30.	31.	30.	25.	17.	8.	0.	0.	0.	0.	191.	59.	72.	48.	53.	
NORTHEAST	0.	0.	0.	0.	18.	17.	25.	30.	31.	30.	25.	17.	8.	0.	0.	0.	0.	200.	60.	73.	48.	53.	
EAST	0.	0.	0.	0.	53.	80.	76.	58.	31.	30.	25.	17.	8.	0.	0.	0.	0.	378.	74.	99.	54.	63.	
SOUTHEAST	0.	0.	0.	0.	62.	108.	121.	118.	102.	78.	49.	19.	8.	0.	0.	0.	0.	665.	97.	141.	63.	80.	
HORIZ.	0.	0.	0.	0.	20.	52.	78.	95.	101.	95.	78.	52.	20.	0.	0.	0.	0.	592.	91.	130.	60.	76.	

MONTH 12	HO 1229.	TOD 33.	TOT 31.	KT .391	KD .183																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
	HOURLY SOLAR RADIATION																		SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	26.	74.	102.	118.	123.	118.	102.	74.	26.	0.	0.	0.	0.	762.	97.	149.	56.	75.
SOUTHWEST	0.	0.	0.	0.	5.	18.	46.	73.	95.	109.	110.	94.	39.	0.	0.	0.	0.	590.	83.	123.	50.	66.
WEST	0.	0.	0.	0.	5.	14.	21.	26.	27.	51.	67.	68.	33.	0.	0.	0.	0.	312.	60.	81.	41.	49.
NORTHWEST	0.	0.	0.	0.	5.	14.	21.	26.	27.	26.	21.	14.	10.	0.	0.	0.	0.	166.	47.	59.	36.	41.
NORTH	0.	0.	0.	0.	5.	14.	21.	26.	27.	26.	21.	14.	5.	0.	0.	0.	0.	161.	47.	58.	36.	40.
NORTHEAST	0.	0.	0.	0.	10.	14.	21.	26.	27.	26.	21.	14.	5.	0.	0.	0.	0.	166.	47.	59.	36.	41.
EAST	0.	0.	0.	0.	33.	68.	67.	51.	27.	26.	21.	14.	5.	0.	0.	0.	0.	312.	60.	81.	41.	49.
SOUTHEAST	0.	0.	0.	0.	39.	94.	110.	109.	95.	73.	46.	18.	5.	0.	0.	0.	0.	590.	83.	123.	50.	66.
HORIZ.	0.	0.	0.	0.	12.	41.	65.	81.	86.	81.	65.	41.	12.	0.	0.	0.	0.	481.	74.	107.	47.	59.

LOCATION INDIANAPOLIS, INDIANA LATITUDE 39 DEGREES 44 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	91.	99.	106.	103.	111.	118.	128.	137.	149.	143.	112.	97.	116.
SOUTHWEST	79.	88.	102.	107.	120.	130.	139.	143.	143.	128.	97.	83.	113.
WEST	59.	71.	90.	104.	123.	136.	142.	139.	128.	104.	74.	60.	102.
NORTHWEST	47.	56.	74.	92.	112.	125.	129.	122.	106.	84.	60.	47.	88.
NORTH	46.	53.	67.	81.	99.	111.	114.	107.	96.	80.	59.	47.	80.
NORTHEAST	47.	56.	74.	92.	112.	125.	129.	122.	106.	84.	60.	47.	88.
EAST	59.	71.	90.	104.	123.	136.	142.	139.	128.	104.	74.	60.	102.
SOUTHEAST	79.	88.	102.	107.	120.	130.	139.	143.	143.	128.	97.	83.	113.
HORIZ.	75.	95.	122.	142.	171.	188.	194.	187.	168.	133.	91.	74.	137.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	141.	151.	157.	143.	146.	152.	164.	183.	210.	211.	167.	149.	165.
SOUTHWEST	118.	133.	149.	151.	163.	173.	184.	194.	199.	185.	141.	123.	158.
WEST	82.	102.	128.	145.	167.	183.	189.	186.	172.	141.	99.	81.	140.
NORTHWEST	60.	75.	99.	123.	148.	164.	167.	156.	133.	103.	73.	59.	113.
NORTH	58.	69.	86.	103.	124.	139.	140.	130.	116.	96.	72.	59.	99.
NORTHEAST	60.	75.	99.	123.	148.	164.	167.	156.	133.	103.	73.	59.	113.
EAST	82.	102.	128.	145.	167.	183.	189.	186.	172.	141.	99.	81.	140.
SOUTHEAST	118.	133.	149.	151.	163.	173.	184.	194.	199.	185.	141.	123.	159.
HORIZ.	111.	144.	187.	214.	252.	275.	281.	270.	243.	192.	130.	107.	200.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	53.	61.	72.	78.	89.	98.	105.	107.	107.	93.	69.	56.	82.
SOUTHWEST	48.	56.	69.	80.	95.	106.	111.	111.	104.	87.	63.	50.	82.
WEST	40.	48.	64.	79.	96.	109.	113.	108.	96.	76.	54.	41.	77.
NORTHWEST	35.	42.	56.	72.	90.	103.	106.	99.	85.	67.	48.	36.	70.
NORTH	35.	42.	52.	66.	82.	94.	97.	91.	80.	65.	48.	36.	65.
NORTHEAST	35.	42.	56.	72.	90.	103.	106.	99.	85.	67.	48.	36.	70.
EAST	40.	48.	64.	79.	96.	109.	113.	108.	96.	76.	54.	41.	77.
SOUTHEAST	48.	56.	69.	80.	95.	106.	111.	111.	104.	87.	63.	50.	82.
HORIZ.	46.	59.	80.	100.	125.	141.	145.	135.	116.	89.	60.	47.	95.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	73.	85.	97.	100.	110.	119.	127.	133.	137.	124.	91.	75.	106.
SOUTHWEST	64.	76.	93.	105.	120.	132.	139.	139.	132.	112.	80.	66.	105.
WEST	49.	62.	83.	102.	123.	138.	142.	134.	118.	93.	63.	49.	96.
NORTHWEST	40.	50.	68.	89.	111.	127.	128.	118.	99.	76.	53.	41.	83.
NORTH	40.	50.	62.	78.	97.	111.	113.	103.	90.	73.	53.	40.	76.
NORTHEAST	40.	50.	68.	89.	111.	127.	128.	118.	99.	76.	53.	41.	83.
EAST	49.	62.	83.	102.	123.	138.	142.	134.	118.	93.	63.	49.	96.
SOUTHEAST	64.	76.	93.	105.	120.	132.	139.	139.	132.	112.	80.	66.	105.
HORIZ.	61.	81.	112.	140.	173.	195.	197.	181.	154.	116.	76.	59.	129.

LOCATION INYOKERN, CALIFORNIA LATITUDE 35 DEGREES 38 MINUTES

MONTH	1	HO	1667.	TOD	47.	TOT	47.	KT	716	KD	.141						
ORIENTATION																	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	105.	185.	236.	267.	277.	267.	236.	185.	105.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	10.	22.	85.	150.	207.	249.	267.	253.	176.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	10.	22.	31.	36.	38.	106.	160.	185.	151.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	10.	22.	31.	36.	38.	36.	31.	22.	43.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	10.	22.	31.	36.	38.	36.	31.	22.	10.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	43.	22.	31.	36.	38.	36.	31.	22.	10.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	151.	185.	160.	106.	38.	36.	31.	22.	10.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	176.	253.	267.	249.	207.	150.	85.	22.	10.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	44.	106.	157.	189.	201.	189.	157.	106.	44.	0.	0.	0.	0.
DAILY TOTAL RADIATION												1863.	191.	308.	107.	155.	
SAG/DAYTIME SATGS												1419.	157.	246.	92.	130.	
SATGS SATGD												738.	104.	151.	71.	90.	
SAG/ALL DAY SATGS												269.	68.	85.	56.	63.	
SATGS SATGD												236.	65.	80.	54.	61.	
SAG/ALL DAY SATGS												269.	68.	85.	56.	63.	
SATGS SATGD												738.	104.	151.	71.	90.	
SAG/ALL DAY SATGS												1419.	157.	246.	92.	130.	
SATGS SATGD												1193.	139.	214.	85.	116.	

DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGD	SAG/ALL DAY SATGS	ALL DAY SATGD
1863.	191.	308.	107.	155.
1419.	157.	246.	92.	130.
738.	104.	151.	71.	90.
269.	68.	85.	56.	63.
236.	65.	80.	54.	61.
269.	68.	85.	56.	63.
738.	104.	151.	71.	90.
1419.	157.	246.	92.	130.
1193.	139.	214.	85.	116.

MONTH 2	HO	2206.	TOD	54.	TOT	52.	KT	745	KD	.127
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ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	31.	116.	180.	226.	255.	264.	255.	226.	180.	116.	31.	0.	0.
SOUTHWEST	0.	0.	0.	4.	17.	28.	37.	43.	45.	200.	247.	273.	270.	225.	84.	0.
WEST	0.	0.	0.	4.	17.	28.	37.	43.	45.	120.	181.	219.	212.	90.	0.	0.
NORTHWEST	0.	0.	0.	4.	17.	28.	37.	43.	45.	43.	37.	56.	85.	46.	0.	0.
NORTH	0.	0.	0.	4.	17.	28.	37.	43.	45.	43.	37.	28.	17.	4.	0.	0.
NORTHEAST	0.	0.	0.	46.	85.	56.	37.	43.	45.	43.	37.	28.	17.	4.	0.	0.
EAST	0.	0.	0.	90.	212.	219.	181.	120.	45.	43.	37.	28.	17.	4.	0.	0.
SOUTHEAST	0.	0.	0.	84.	225.	270.	273.	247.	200.	138.	69.	28.	17.	4.	0.	0.
HORIZ.	0.	0.	0.	15.	84.	152.	205.	239.	251.	239.	205.	152.	84.	15.	0.	0.
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	HOURLY SOLAR RADIATION															
	-----															
	DAILY TOTAL RADIATION															
	-----															
	SAG/DAYTIME SAGS SAT6D SAT6S SAT6D SAT6S SAT6D															
	-----															
	SAG/ALL DAY SAT6S SAT6D SAT6S SAT6D SAT6S SAT6D															
	-----															
	1881. 196. 293. 113. 162.															
	1556. 163. 252. 102. 143.															
	997. 124. 151. 84. 111.															
	442. 85. 110. 67. 78.															
	305. 75. 93. 62. 70.															
	442. 85. 110. 67. 79.															
	997. 124. 181. 84. 111.															
	1556. 163. 252. 102. 143.															
	1643. 163. 263. 105. 148.															

DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGD	SAG/ALL DAY SATGS	ALL DAY SATGD
1881.	186.	293.	113.	162.
1556.	163.	252.	102.	143.
897.	124.	181.	84.	111.
442.	85.	110.	67.	78.
305.	75.	93.	62.	70.
442.	85.	110.	67.	78.
897.	124.	181.	84.	111.
1556.	163.	252.	102.	143.
1643.	169.	265.	105.	148.

MONTH 3	HO	2778.	TOD	59.	TOT	57.	KT	803	KD	.125
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ORIENTATION		HOURLY SOLAR RADIATION																	DAILY TOTAL RADIATION		SAG/DAYTIME		SAG/ALL DAY	
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	39.	103.	160.	205.	234.	243.	234.	205.	160.	103.	39.	0.	0.	0.	1726.	170.	260.	112.	158.		
SOUTHWEST	0.	0.	0.	11.	25.	37.	46.	121.	188.	240.	271.	276.	246.	162.	0.	0.	0.	1622.	163.	248.	109.	152.		
WEST	0.	0.	0.	11.	25.	37.	46.	52.	54.	52.	46.	37.	25.	11.	0.	0.	0.	1273.	141.	207.	98.	131.		
NORTHWEST	0.	0.	0.	11.	25.	37.	46.	52.	54.	52.	46.	101.	136.	122.	0.	0.	0.	682.	103.	138.	70.	97.		
NORTH	0.	0.	0.	11.	25.	37.	46.	52.	54.	52.	46.	37.	25.	11.	0.	0.	0.	396.	44.	105.	70.	80.		
NORTHEAST	0.	0.	0.	122.	136.	101.	46.	52.	54.	52.	46.	37.	25.	11.	0.	0.	0.	682.	103.	138.	79.	97.		
EAST	0.	0.	0.	196.	260.	251.	205.	136.	54.	52.	46.	37.	25.	11.	0.	0.	0.	1273.	141.	207.	98.	131.		
SOUTHEAST	0.	0.	0.	162.	246.	276.	271.	240.	188.	121.	46.	37.	25.	11.	0.	0.	0.	1622.	163.	248.	109.	152.		
HORIZ.	0.	0.	0.	53.	134.	207.	264.	301.	313.	301.	264.	207.	134.	53.	0.	0.	0.	2231.	203.	318.	129.	187.		

DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGD	SAG/ALL DAY SATGS	ALL DAY SATGD
1726.	170.	260.	112.	158.
1622.	163.	248.	109.	152.
1273.	141.	207.	98.	131.
682.	103.	138.	70.	97.
396.	84.	105.	70.	80.
682.	103.	138.	79.	97.
1273.	141.	207.	98.	131.
1622.	163.	248.	109.	152.
2231.	202.	318.	129.	187.

LOCATION INYOKERN, CALIFORNIA LATITUDE 35 DEGREES 38 MINUTES

MONTH	4	HO	3313.	TOD	66.	TOT	63.	KT	.800	KD	.125	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	5.	18.	64.	114.	154.	180.	189.	180.	154.	114.	64.	18.	5.	0.	0.
SOUTHWEST	0.	0.	5.	18.	31.	43.	52.	87.	151.	201.	233.	240.	220.	166.	55.	0.	0.
WEST	0.	0.	5.	18.	31.	43.	52.	58.	59.	138.	205.	251.	266.	231.	91.	0.	0.
NORTHWEST	0.	0.	5.	18.	31.	43.	52.	58.	59.	58.	88.	140.	174.	172.	76.	0.	0.
NORTH	0.	0.	20.	23.	31.	43.	52.	58.	59.	58.	52.	43.	31.	23.	20.	0.	0.
NORTHEAST	0.	0.	76.	172.	174.	140.	88.	58.	59.	58.	52.	43.	31.	18.	5.	0.	0.
EAST	0.	0.	91.	231.	266.	251.	205.	138.	59.	58.	52.	43.	31.	18.	5.	0.	0.
SOUTHEAST	0.	0.	55.	166.	220.	240.	233.	201.	151.	87.	52.	43.	31.	18.	5.	0.	0.
HORIZ.	0.	0.	17.	91.	172.	243.	298.	333.	345.	333.	298.	243.	172.	91.	17.	0.	0.

MONTH	5	HO	3633.	TOD	73.	TOT	70.	KT	.815	KD	.125	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	10.	23.	35.	79.	116.	141.	149.	141.	116.	79.	35.	23.	10.	0.	0.
SOUTHWEST	0.	0.	10.	23.	35.	47.	55.	62.	124.	173.	204.	213.	198.	155.	80.	0.	0.
WEST	0.	0.	10.	23.	35.	47.	55.	61.	62.	139.	204.	250.	267.	244.	151.	0.	0.
NORTHWEST	0.	0.	10.	23.	35.	47.	55.	61.	62.	61.	117.	167.	201.	203.	140.	0.	0.
NORTH	0.	0.	52.	57.	38.	47.	55.	61.	62.	61.	55.	47.	38.	57.	52.	0.	0.
NORTHEAST	0.	0.	140.	203.	201.	167.	117.	61.	62.	61.	55.	47.	35.	23.	10.	0.	0.
EAST	0.	0.	151.	244.	267.	250.	204.	139.	62.	61.	55.	47.	35.	23.	10.	0.	0.
SOUTHEAST	0.	0.	80.	155.	198.	213.	204.	173.	124.	62.	55.	47.	35.	23.	10.	0.	0.
HORIZ.	0.	0.	41.	119.	197.	266.	320.	354.	365.	354.	320.	266.	197.	119.	41.	0.	0.

MONTH	6	HO	3743.	TOD	81.	TOT	77.	KT	830	KD	.125	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	1.	11.	24.	37.	65.	102.	126.	134.	126.	102.	65.	37.	24.	11.	1.	0.
SOUTHWEST	0.	1.	11.	24.	37.	48.	57.	62.	113.	162.	194.	203.	189.	149.	82.	2.	0.
WEST	0.	1.	11.	24.	37.	48.	57.	62.	64.	140.	205.	250.	268.	248.	166.	3.	0.
NORTHWEST	0.	1.	11.	24.	37.	48.	57.	62.	64.	72.	130.	179.	212.	215.	160.	3.	0.
NORTH	0.	2.	66.	71.	53.	48.	57.	62.	64.	62.	57.	48.	53.	71.	66.	2.	0.
NORTHEAST	0.	3.	160.	215.	212.	179.	130.	72.	64.	62.	57.	48.	37.	24.	11.	1.	0.
EAST	0.	3.	166.	248.	258.	250.	205.	140.	64.	62.	57.	48.	37.	24.	11.	1.	0.
SOUTHEAST	0.	2.	82.	149.	189.	203.	194.	162.	113.	62.	57.	48.	37.	24.	11.	1.	0.
HORIZ.	0.	2.	52.	130.	208.	277.	331.	365.	376.	365.	331.	277.	208.	130.	52.	2.	0.



[illegible]

LOCATION ITHOKEBN, CALIFORNIA LATITUDE 35 DEGREES 38 MINUTES

MONTH 10 HO 2171. TON 69. TOT 66. KT .795 KD .12°

ORIENTATION	HOURLY SOLAR RADIATION																			DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGN		SATGS	SATGN		
SOUTH	0	0	0	28	122	192	243	275	286	275	243	192	122	28	0	0	0	2007	210	325	131	183		
SOUTHWEST	0	0	0	4	17	29	73	148	215	266	293	288	236	76	0	0	0	1645	184	279	119	162		
WEST	0	0	0	4	17	29	38	44	46	127	194	233	221	81	0	0	0	1033	141	201	100	127		
NORTHWEST	0	0	0	4	17	29	38	44	46	44	38	57	87	41	0	0	0	444	100	125	81	92		
NORTH	0	0	0	4	17	29	38	44	46	44	38	20	17	4	0	0	0	309	90	108	76	84		
NORTHEAST	0	0	0	41	87	57	38	44	46	44	38	20	17	4	0	0	0	444	100	125	81	92		
EAST	0	0	0	81	221	233	194	127	46	44	38	20	17	4	0	0	0	1033	141	201	100	127		
SOUTHEAST	0	0	0	76	236	288	293	266	215	148	73	20	17	4	0	0	0	1645	184	279	119	162		
HORIZ.	0	0	0	13	96	159	217	254	266	254	217	159	86	13	0	0	0	1725	190	289	122	167		

MONTH 11 HO 1655. TON 57. TOT 56. KT .743 KD .12°

ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SATGS	SATGN	SATGS
SOUTH	0	0	0	0	108	194	250	282	293	282	250	194	108	0	0	0	0	209	332	119	171
SOUTHWEST	0	0	0	0	10	21	88	157	218	263	282	266	182	0	0	0	0	172	266	104	143
WEST	0	0	0	0	10	21	30	35	37	110	167	194	155	0	0	0	0	116	164	81	100
NORTHWEST	0	0	0	0	10	21	30	35	37	35	30	21	43	0	0	0	0	77	94	65	71
NORTH	0	0	0	0	10	21	30	35	37	35	30	21	10	0	0	0	0	75	89	64	69
NORTHEAST	0	0	0	0	43	21	30	35	37	35	30	21	10	0	0	0	0	77	94	65	71
EAST	0	0	0	0	155	194	167	110	37	35	30	21	10	0	0	0	0	116	164	81	100
SOUTHEAST	0	0	0	0	192	266	282	263	218	157	88	21	10	0	0	0	0	172	266	104	143
HORIZ.	0	0	0	0	43	109	162	196	208	196	162	109	43	0	0	0	0	152	229	96	128

MONTH 12 HO 1456. TON 49. TOT 49. KT .742 KD .12°

ORIENTATION	HOURLY SOLAR RADIATION																			DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGN		SATGS	SATGN		
SOUTH	0	0	0	0	96	196	256	291	302	291	256	196	96	0	0	0	0	208	338	112	164			
SOUTHWEST	0	0	0	0	7	27	94	163	224	267	284	261	154	0	0	0	0	168	265	96	135			
WEST	0	0	0	0	7	18	27	32	34	105	161	183	126	0	0	0	0	694	105	150	89			
NORTHWEST	0	0	0	0	7	18	27	32	34	32	27	18	29	0	0	0	0	224	67	82	56			
NORTH	0	0	0	0	7	18	27	32	34	32	27	18	7	0	0	0	0	202	65	78	60			
NORTHEAST	0	0	0	0	20	18	27	32	34	32	27	18	7	0	0	0	0	67	82	56	62			
EAST	0	0	0	0	126	183	161	105	34	32	27	18	7	0	0	0	0	105	150	71	89			
SOUTHEAST	0	0	0	0	154	261	284	267	224	163	94	27	7	0	0	0	0	168	265	96	135			
HORIZ.	0	0	0	0	20	93	145	170	191	179	145	93	29	0	0	0	0	136	207	83	112			

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	191.	186.	170.	139.	129.	130.	141.	164.	199.	210.	209.	208.	173.
SOUTHWEST	157.	163.	163.	153.	154.	157.	155.	179.	191.	184.	172.	168.	167.
WEST	104.	124.	141.	150.	164.	171.	171.	179.	167.	141.	116.	105.	144.
NORTHWEST	68.	85.	103.	123.	153.	153.	154.	146.	126.	100.	77.	67.	112.
NORTH	65.	75.	84.	96.	113.	125.	126.	117.	106.	90.	75.	65.	95.
NORTHEAST	68.	85.	103.	123.	143.	153.	154.	146.	126.	100.	77.	67.	112.
EAST	104.	124.	141.	150.	164.	171.	171.	175.	167.	141.	116.	105.	144.
SOUTHEAST	157.	163.	163.	153.	154.	157.	165.	179.	191.	184.	172.	168.	167.
HORIZ.	139.	169.	202.	221.	247.	258.	255.	253.	235.	190.	152.	136.	205.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	308.	293.	260.	199.	172.	168.	183.	225.	291.	325.	332.	338.	258.
SOUTHWEST	246.	252.	248.	225.	216.	215.	224.	251.	278.	279.	266.	265.	247.
WEST	151.	181.	207.	220.	233.	240.	241.	245.	235.	201.	164.	150.	206.
NORTHWEST	85.	110.	138.	169.	195.	209.	205.	192.	162.	125.	94.	82.	147.
NORTH	80.	93.	105.	120.	144.	159.	156.	141.	127.	108.	89.	78.	117.
NORTHEAST	85.	110.	138.	169.	195.	209.	205.	192.	162.	125.	94.	82.	147.
EAST	151.	181.	207.	220.	233.	240.	241.	245.	235.	201.	164.	150.	206.
SOUTHEAST	246.	252.	248.	225.	216.	215.	224.	251.	278.	279.	266.	265.	247.
HORIZ.	214.	263.	318.	347.	379.	393.	383.	382.	356.	289.	229.	207.	313.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	107.	113.	112.	103.	103.	107.	116.	125.	136.	131.	119.	112.	115.
SOUTHWEST	92.	102.	109.	111.	117.	123.	129.	134.	132.	119.	104.	96.	114.
WEST	71.	84.	98.	109.	123.	131.	135.	132.	120.	100.	81.	71.	105.
NORTHWEST	56.	67.	79.	94.	111.	121.	123.	115.	99.	81.	65.	56.	89.
NORTH	54.	67.	79.	79.	93.	104.	107.	99.	89.	76.	64.	55.	79.
NORTHEAST	56.	67.	79.	94.	111.	121.	123.	115.	99.	81.	65.	56.	89.
EAST	71.	84.	98.	109.	123.	131.	135.	132.	120.	100.	81.	71.	105.
SOUTHEAST	92.	102.	109.	111.	117.	123.	129.	134.	132.	119.	104.	96.	114.
HORIZ.	85.	105.	129.	148.	171.	183.	182.	174.	154.	122.	96.	83.	136.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	155.	162.	158.	136.	128.	129.	140.	150.	182.	183.	171.	164.	156.
SOUTHWEST	130.	143.	152.	150.	153.	158.	164.	173.	176.	162.	143.	135.	153.
WEST	90.	111.	131.	147.	164.	173.	174.	170.	154.	127.	100.	89.	136.
NORTHWEST	63.	78.	97.	120.	142.	154.	153.	141.	118.	92.	71.	62.	107.
NORTH	61.	70.	80.	93.	111.	124.	124.	113.	100.	84.	69.	60.	91.
NORTHEAST	63.	78.	97.	120.	142.	154.	153.	141.	118.	92.	71.	62.	107.
EAST	90.	111.	131.	147.	164.	173.	174.	173.	154.	127.	100.	89.	136.
SOUTHEAST	130.	143.	152.	150.	153.	158.	164.	173.	176.	162.	143.	135.	153.
HORIZ.	116.	148.	187.	217.	249.	265.	257.	245.	215.	167.	128.	112.	192.





LOCATION ITHACA, NEW YORK LATITUDE 42 DEGREES 26 MINUTES

MONTH	4	HO	3184.	TOD	48.	TOT	46.	KT	428	KD	.184											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
																			SATGS	SAT60	SAT6S	SAT6S
SOUTH	0.	0.	7.	20.	47.	73.	93.	106.	111.	106.	93.	73.	47.	20.	7.	0.	0.	805.	94.	132.	72.	93.
SOUTHWEST	0.	0.	7.	18.	29.	38.	46.	69.	94.	111.	119.	116.	102.	75.	30.	0.	0.	855.	97.	137.	73.	96.
WEST	0.	0.	7.	18.	29.	38.	46.	50.	52.	80.	101.	114.	114.	97.	46.	0.	0.	793.	94.	131.	71.	92.
NORTHWEST	0.	0.	7.	18.	29.	38.	46.	50.	52.	50.	51.	68.	77.	73.	39.	0.	0.	598.	83.	110.	65.	81.
NORTH	0.	0.	13.	18.	29.	38.	46.	50.	52.	50.	46.	38.	29.	18.	13.	0.	0.	442.	74.	94.	60.	72.
NORTHEAST	0.	0.	39.	73.	77.	68.	51.	50.	52.	50.	46.	38.	29.	18.	7.	0.	0.	598.	83.	110.	65.	81.
EAST	0.	0.	46.	97.	114.	114.	101.	80.	52.	50.	46.	38.	29.	18.	7.	0.	0.	793.	94.	131.	71.	92.
SOUTHEAST	0.	0.	30.	75.	102.	116.	119.	111.	94.	69.	46.	38.	29.	18.	7.	0.	0.	855.	97.	137.	73.	96.
HORIZ.	0.	0.	17.	53.	91.	123.	148.	164.	170.	164.	148.	123.	91.	53.	17.	0.	0.	1363.	126.	190.	90.	125.

MONTH	5	HO	3610.	TOD	60.	TOT	58.	KT	502	KD	18A	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	3.	13.	25.	44.	72.	95.	110.	115.	110.	95.	72.	44.	25.	13.	3.	0.
SOUTHWEST	0.	3.	13.	25.	36.	45.	52.	69.	98.	120.	131.	130.	117.	91.	52.	4.	0.
WEST	0.	3.	13.	25.	36.	45.	52.	57.	59.	93.	121.	138.	142.	128.	88.	7.	0.
NORTHWEST	0.	3.	13.	25.	36.	45.	52.	57.	59.	57.	71.	92.	105.	105.	80.	7.	0.
NORTH	0.	5.	33.	35.	36.	45.	52.	57.	59.	57.	52.	45.	36.	35.	33.	5.	0.
NORTHEAST	0.	7.	80.	105.	105.	92.	71.	57.	59.	57.	52.	45.	36.	25.	13.	3.	0.
EAST	0.	7.	88.	128.	142.	138.	121.	93.	59.	57.	52.	45.	36.	25.	13.	3.	0.
SOUTHEAST	0.	4.	52.	91.	117.	130.	131.	120.	98.	69.	52.	45.	36.	25.	13.	3.	0.
HORIZ.	0.	5.	37.	81.	123.	160.	188.	206.	213.	206.	188.	160.	123.	81.	37.	5.	0.
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MONTH	6	HO	3765.	TOD	69.	TOT	67.	KT	538	KD	183	HOURLY SOLAR RADIATION								DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	5.	15.	27.	40.	70.	94.	109.	115.	109.	94.	70.	40.	27.	15.	5.	0.	833.	114.	149.	95.	117.
SOUTHWEST	0.	5.	15.	27.	37.	47.	54.	67.	99.	123.	135.	136.	123.	97.	58.	12.	0.	1033.	125.	168.	102.	129.
WEST	0.	5.	15.	27.	37.	47.	54.	59.	60.	98.	129.	150.	156.	143.	104.	25.	0.	1109.	120.	175.	105.	134.
NORTHWEST	0.	5.	15.	27.	37.	47.	54.	59.	60.	59.	79.	103.	119.	121.	98.	27.	0.	910.	118.	156.	98.	122.
NORTH	0.	15.	44.	44.	37.	47.	54.	59.	60.	59.	54.	47.	37.	44.	44.	15.	0.	660.	105.	132.	89.	107.
NORTHEAST	0.	27.	98.	121.	119.	103.	79.	59.	60.	59.	54.	47.	37.	27.	15.	5.	0.	910.	118.	156.	98.	122.
EAST	0.	25.	104.	143.	156.	150.	129.	98.	60.	59.	54.	47.	37.	27.	15.	5.	0.	1109.	129.	175.	105.	134.
SOUTHEAST	0.	12.	58.	97.	123.	136.	135.	123.	99.	67.	54.	47.	37.	27.	15.	5.	0.	1033.	125.	168.	102.	129.
HORIZ.	0.	9.	47.	93.	138.	177.	207.	226.	232.	226.	207.	177.	138.	93.	47.	9.	0.	2026.	179.	263.	136.	189.

LOCATION ITHACA, NEW YORK LATITUDE 42 DEG 05' 26" MINUTES

MONTH	7	HO	3608.	TOH	74.	TOT	71.	KT	.554	KD	.180						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	3.	13.	25.	45.	77.	103.	120.	126.	120.	103.	77.	45.	25.	13.	3.	0.
SOUTHWEST	0.	3.	13.	25.	36.	46.	53.	72.	106.	132.	146.	146.	131.	102.	57.	5.	0.
WEST	0.	3.	13.	25.	36.	46.	53.	58.	59.	101.	134.	156.	162.	146.	99.	8.	0.
NORTHWEST	0.	3.	13.	25.	36.	46.	53.	58.	59.	58.	75.	101.	119.	120.	91.	8.	0.
NORTH	0.	5.	37.	37.	36.	46.	53.	58.	59.	58.	53.	46.	36.	37.	37.	5.	0.
NORTHEAST	0.	8.	91.	120.	119.	101.	75.	58.	59.	58.	53.	46.	36.	25.	13.	3.	0.
EAST	0.	8.	99.	146.	142.	156.	134.	101.	59.	58.	53.	46.	36.	25.	13.	3.	0.
SOUTHEAST	0.	5.	57.	102.	131.	146.	146.	132.	106.	72.	53.	46.	36.	25.	13.	3.	0.
HORIZ.	0.	5.	40.	88.	135.	177.	209.	220.	236.	229.	209.	177.	135.	88.	40.	5.	0.

MONTH	8	HO	3162.	TOH	72.	TOT	69.	KT	.530	KD	.184						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	7.	21.	56.	89.	116.	133.	139.	133.	116.	89.	56.	21.	7.	0.	0.
SOUTHWEST	0.	0.	7.	19.	31.	41.	49.	81.	115.	140.	152.	150.	132.	96.	37.	0.	0.
WEST	0.	0.	7.	19.	31.	41.	49.	54.	55.	95.	128.	147.	150.	126.	57.	0.	0.
NORTHWEST	0.	0.	7.	19.	31.	41.	49.	54.	55.	54.	57.	82.	97.	94.	48.	0.	0.
NORTH	0.	0.	15.	19.	31.	41.	49.	54.	55.	54.	49.	41.	31.	19.	15.	0.	0.
NORTHEAST	0.	0.	48.	94.	97.	82.	57.	54.	55.	54.	49.	41.	31.	19.	7.	0.	0.
EAST	0.	0.	57.	126.	150.	147.	128.	95.	55.	54.	49.	41.	31.	19.	7.	0.	0.
SOUTHEAST	0.	0.	37.	96.	132.	150.	152.	140.	115.	81.	49.	41.	31.	19.	7.	0.	0.
HORIZ.	0.	0.	18.	63.	110.	152.	184.	205.	212.	205.	184.	152.	110.	63.	18.	0.	0.

MONTH	9	HO	2517.	TOD	64.	TOT	63.	HOURLY SOLAR RADIATION							.497	KD	.188			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	24.	62.	97.	125.	142.	148.	142.	125.	97.	62.	24.	0.	0.	0.	1052.	136.	191.
SOUTHWEST	0.	0.	0.	11.	23.	33.	49.	87.	119.	142.	152.	147.	124.	74.	0.	0.	0.	962.	130.	180.
WEST	0.	0.	0.	11.	23.	33.	41.	46.	48.	85.	114.	130.	126.	87.	0.	0.	0.	746.	115.	158.
NORTHWEST	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	56.	68.	55.	0.	0.	0.	472.	96.	121.
NORTH	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.	360.	89.	107.
NORTHEAST	0.	0.	0.	55.	68.	56.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.	472.	96.	121.
EAST	0.	0.	0.	87.	126.	130.	114.	85.	48.	46.	41.	33.	23.	11.	0.	0.	0.	746.	115.	158.
SOUTHEAST	0.	0.	0.	74.	124.	147.	152.	142.	119.	87.	49.	33.	23.	11.	0.	0.	0.	962.	130.	180.
HORIZ.	0.	0.	1.	32.	76.	116.	147.	167.	174.	167.	147.	116.	76.	32.	1.	0.	0.	1249.	149.	214.

LOCATION	ITHACA, NEW YORK										LATITUDE 42 DEGREES 26 MINUTES									
MONTH 10	HO 1840.	TOD	54.	TOT	51.	KT	HOURLY SOLAR RADIATION										.186			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	7.	57.	97.	126.	144.	150.	144.	126.	97.	57.	7.	0.	0.	0.	1012.	127.	186.
SOUTHWEST	0.	0.	0.	3.	14.	24.	52.	68.	117.	137.	144.	135.	100.	15.	0.	0.	0.	829.	113.	162.
WEST	0.	0.	0.	3.	14.	24.	32.	37.	38.	72.	97.	107.	93.	16.	0.	0.	0.	532.	92.	123.
NORTHWEST	0.	0.	0.	3.	14.	24.	32.	37.	38.	37.	32.	31.	39.	9.	0.	0.	0.	296.	75.	92.
NORTH	0.	0.	0.	3.	14.	24.	32.	37.	38.	37.	32.	24.	14.	3.	0.	0.	0.	257.	72.	87.
NORTHEAST	0.	0.	0.	9.	79.	31.	32.	37.	38.	37.	32.	24.	14.	3.	0.	0.	0.	296.	75.	92.
EAST	0.	0.	0.	16.	93.	107.	97.	72.	38.	37.	32.	24.	14.	3.	0.	0.	0.	532.	92.	123.
SOUTHEAST	0.	0.	0.	15.	100.	135.	144.	137.	117.	88.	52.	24.	14.	3.	0.	0.	0.	829.	113.	162.
HORIZ.	0.	0.	0.	6.	42.	79.	108.	127.	133.	127.	108.	79.	42.	6.	0.	0.	0.	855.	115.	166.
MONTH 11	HO 1284.	TOD	41.	TOT	40.	KT	HOURLY SOLAR RADIATION										.180			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	0.	22.	55.	75.	88.	92.	88.	75.	55.	22.	0.	0.	0.	0.	571.	88.	126.
SOUTHWEST	0.	0.	0.	0.	6.	16.	37.	57.	72.	82.	82.	70.	34.	0.	0.	0.	0.	455.	79.	109.
WEST	0.	0.	0.	0.	6.	14.	21.	25.	26.	42.	53.	52.	29.	0.	0.	0.	0.	268.	63.	81.
NORTHWEST	0.	0.	0.	0.	6.	14.	21.	25.	26.	25.	21.	14.	11.	0.	0.	0.	0.	162.	55.	66.
NORTH	0.	0.	0.	0.	6.	14.	21.	25.	26.	25.	21.	14.	6.	0.	0.	0.	0.	157.	54.	65.
NORTHEAST	0.	0.	0.	0.	11.	14.	21.	25.	26.	25.	21.	14.	6.	0.	0.	0.	0.	162.	55.	66.
EAST	0.	0.	0.	0.	29.	52.	53.	42.	26.	25.	21.	14.	6.	0.	0.	0.	0.	268.	63.	81.
SOUTHEAST	0.	0.	0.	0.	34.	70.	82.	82.	72.	57.	37.	16.	6.	0.	0.	0.	0.	455.	79.	109.
HORIZ.	0.	0.	0.	0.	13.	36.	55.	68.	72.	68.	55.	36.	13.	0.	0.	0.	0.	417.	76.	103.
MONTH 12	HO 1078.	TOD	30.	TOT	29.	KT	HOURLY SOLAR RADIATION										.180			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	0.	13.	55.	79.	93.	98.	93.	79.	55.	13.	0.	0.	0.	0.	577.	80.	120.
SOUTHWEST	0.	0.	0.	0.	4.	15.	37.	59.	76.	86.	85.	69.	18.	0.	0.	0.	0.	449.	69.	100.
WEST	0.	0.	0.	0.	4.	12.	18.	22.	24.	41.	52.	50.	16.	0.	0.	0.	0.	237.	50.	67.
NORTHWEST	0.	0.	0.	0.	4.	12.	18.	22.	24.	22.	18.	12.	6.	0.	0.	0.	0.	136.	41.	51.
NORTH	0.	0.	0.	0.	4.	12.	18.	22.	24.	22.	18.	12.	4.	0.	0.	0.	0.	134.	41.	51.
NORTHEAST	0.	0.	0.	0.	6.	12.	18.	22.	24.	22.	18.	12.	4.	0.	0.	0.	0.	136.	41.	51.
EAST	0.	0.	0.	0.	16.	50.	52.	41.	24.	22.	18.	12.	4.	0.	0.	0.	0.	237.	50.	67.
SOUTHEAST	0.	0.	0.	0.	18.	69.	85.	86.	76.	59.	37.	15.	4.	0.	0.	0.	0.	449.	69.	100.
HORIZ.	0.	0.	0.	0.	7.	30.	50.	62.	67.	62.	50.	30.	7.	0.	0.	0.	0.	364.	61.	87.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	81.	94.	97.	94.	107.	114.	124.	132.	136.	127.	88.	80.	106.
SOUTHWEST	69.	82.	92.	97.	115.	125.	134.	136.	130.	113.	79.	69.	103.
WEST	51.	63.	80.	94.	116.	129.	135.	130.	115.	92.	63.	50.	93.
NORTHWEST	41.	48.	65.	83.	105.	118.	122.	114.	96.	75.	55.	41.	80.
NORTH	41.	45.	58.	74.	92.	105.	108.	101.	89.	72.	54.	41.	73.
NORTHEAST	41.	48.	65.	83.	105.	118.	122.	114.	96.	75.	55.	41.	80.
EAST	51.	63.	80.	94.	116.	129.	135.	130.	115.	92.	63.	50.	93.
SOUTHEAST	69.	82.	92.	97.	115.	125.	134.	136.	130.	113.	79.	69.	103.
HORIZ.	64.	85.	109.	126.	161.	179.	186.	174.	149.	115.	76.	61.	124.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	124.	149.	146.	132.	143.	149.	163.	178.	191.	186.	126.	120.	151.
SOUTHWEST	104.	128.	137.	137.	157.	168.	180.	185.	180.	162.	109.	100.	146.
WEST	71.	93.	116.	131.	159.	175.	183.	175.	154.	123.	81.	67.	127.
NORTHWEST	52.	65.	88.	110.	140.	156.	159.	146.	121.	92.	66.	51.	104.
NORTH	51.	60.	76.	94.	118.	132.	134.	123.	107.	87.	65.	51.	92.
NORTHEAST	52.	65.	88.	110.	140.	156.	159.	146.	121.	92.	66.	51.	104.
EAST	71.	93.	116.	131.	159.	175.	183.	175.	154.	123.	81.	67.	127.
SOUTHEAST	104.	128.	137.	137.	157.	168.	180.	185.	180.	162.	109.	100.	146.
HORIZ.	95.	133.	168.	190.	235.	263.	272.	252.	214.	166.	103.	87.	182.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	47.	56.	66.	72.	86.	95.	102.	103.	98.	84.	59.	48.	76.
SOUTHWEST	42.	51.	63.	73.	91.	102.	108.	105.	95.	78.	55.	44.	76.
WEST	35.	42.	57.	71.	92.	105.	109.	102.	88.	68.	49.	37.	71.
NORTHWEST	31.	35.	49.	65.	85.	98.	101.	93.	79.	61.	46.	33.	65.
NORTH	31.	34.	46.	60.	78.	89.	92.	85.	75.	59.	46.	33.	61.
NORTHEAST	31.	35.	49.	65.	85.	98.	101.	93.	79.	61.	46.	33.	65.
EAST	35.	42.	57.	71.	92.	105.	109.	102.	88.	68.	49.	37.	71.
SOUTHEAST	42.	51.	63.	73.	91.	102.	108.	105.	95.	78.	55.	44.	76.
HORIZ.	40.	52.	72.	90.	120.	136.	140.	127.	105.	79.	54.	41.	88.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	64.	80.	90.	93.	108.	117.	126.	129.	126.	110.	74.	63.	98.
SOUTHWEST	56.	71.	86.	96.	117.	129.	136.	133.	121.	100.	67.	55.	97.
WEST	43.	56.	75.	92.	119.	134.	138.	127.	108.	82.	56.	43.	89.
NORTHWEST	36.	43.	61.	81.	106.	122.	124.	111.	91.	68.	50.	37.	77.
NORTH	35.	41.	55.	72.	93.	107.	108.	98.	84.	66.	50.	37.	70.
NORTHEAST	36.	43.	61.	81.	106.	122.	124.	111.	91.	68.	50.	37.	77.
EAST	43.	56.	75.	92.	119.	134.	138.	127.	108.	82.	56.	43.	89.
SOUTHEAST	56.	71.	86.	96.	117.	129.	136.	133.	121.	100.	67.	55.	97.
HORIZ.	52.	73.	101.	125.	167.	189.	192.	170.	138.	101.	65.	50.	119.





LOCATION LAKE CHARLES, LOUISIANA LATITUDE 30 DEGREES 13 MINUTES

MONTH	4	HO	3386.	TOD	71.	TOT	68.	KT	542	KD	.182						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	5.	19.	43.	72.	95.	110.	115.	110.	95.	72.	43.	19.	5.	0.	0.
SOUTHWEST	0.	0.	5.	19.	33.	45.	54.	65.	69.	126.	141.	142.	128.	94.	26.	0.	0.
WEST	0.	0.	5.	19.	33.	45.	54.	60.	62.	103.	135.	155.	157.	131.	41.	0.	0.
NORTHWEST	0.	0.	5.	19.	33.	45.	54.	60.	62.	60.	82.	104.	114.	103.	35.	0.	0.
NORTH	0.	0.	12.	25.	33.	45.	54.	60.	62.	60.	54.	45.	33.	25.	12.	0.	0.
NORTHEAST	0.	0.	35.	103.	114.	104.	82.	60.	62.	60.	54.	45.	33.	19.	5.	0.	0.
EAST	0.	0.	41.	131.	157.	155.	135.	107.	62.	60.	54.	45.	33.	19.	5.	0.	0.
SOUTHEAST	0.	0.	26.	94.	128.	142.	141.	126.	99.	65.	54.	45.	33.	19.	5.	0.	0.
HORIZ.	0.	0.	12.	64.	119.	168.	206.	230.	238.	230.	206.	168.	119.	64.	12.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS SAT6D SAT6S SAT6T																	
SAG/ALL DAY SATGS SAT6S SAT6T SAT6S SAT6T																	

MONTH	5	HO	3623.	TOD	77.	TOT	74.	KT	.578	KD	.177						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	9.	23.	36.	54.	76.	91.	96.	91.	76.	54.	36.	23.	9.	0.	0.
SOUTHWEST	0.	0.	9.	23.	36.	47.	56.	62.	67.	115.	132.	135.	123.	94.	43.	0.	0.
WEST	0.	0.	9.	23.	36.	47.	56.	62.	64.	107.	142.	165.	169.	148.	79.	0.	0.
NORTHWEST	0.	0.	9.	23.	36.	47.	56.	62.	64.	73.	103.	126.	138.	129.	75.	0.	0.
NORTH	0.	0.	32.	47.	46.	47.	56.	62.	64.	62.	56.	47.	46.	47.	32.	0.	0.
NORTHEAST	0.	0.	75.	120.	139.	126.	103.	73.	64.	62.	56.	47.	36.	23.	9.	0.	0.
EAST	0.	0.	79.	148.	169.	165.	142.	107.	64.	62.	56.	47.	36.	23.	9.	0.	0.
SOUTHEAST	0.	0.	43.	94.	123.	135.	132.	115.	87.	62.	56.	47.	36.	23.	9.	0.	0.
HORIZ.	0.	0.	26.	82.	139.	189.	228.	252.	261.	252.	228.	189.	139.	82.	26.	0.	0.

MONTH	6	HO	3700.	TOD	83.	TOT	81.	KT	.507	KD	.174						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0	0	11.	24.	37.	48.	68.	82.	87.	82.	68.	48.	37.	24.	11.	0	0
SOUTHWEST	0	0	11.	24.	37.	48.	57.	62.	61.	110.	127.	131.	120.	93.	46.	0	0
WEST	0	0	11.	24.	37.	48.	57.	62.	64.	109.	146.	169.	174.	154.	91.	0	0
NORTHWEST	0	0	11.	24.	37.	48.	57.	62.	64.	81.	112.	136.	148.	140.	89.	0	0
NORTH	0	0	41.	57.	57.	51.	57.	62.	64.	62.	57.	51.	57.	57.	41.	0	0
NORTHEAST	0	0	89.	140.	148.	136.	112.	81.	64.	62.	57.	48.	37.	24.	11.	0	0
EAST	0	0	91.	154.	174.	169.	146.	109.	64.	62.	57.	48.	37.	24.	11.	0	0
SOUTHEAST	0	0	46.	93.	120.	131.	127.	110.	81.	62.	57.	48.	37.	24.	11.	0	0
HORIZ.	0	0	32.	90.	148.	198.	238.	262.	271.	262.	238.	198.	148.	90.	32.	0	0
																	</

	SAG/ALL DAY	DAY
	SATGS	SATGD
•	104.	121.
•	113.	137.
•	117.	144.
•	112.	136.
•	104.	120.
•	112.	136.
•	117.	144.
•	113.	137.
•	149.	200.

	SAG/ALL DAY	DAY
	SATGS	SATGN
•	110.	131.
•	116.	142.
•	117.	143.
•	109.	129.
•	100.	113.
•	109.	129.
•	117.	143.
•	116.	142.
•	146.	196.

	SAG/ALL DAY	SATGS SATGN
•	114.	141.
•	114.	141.
•	109.	133.
•	99.	115.
•	93.	104.
•	99.	115.
•	109.	133.
•	114.	141.
•	134.	176.

LOCATION LAKE CHARLES, LOUISIANA LATITUDE 30 DEGREES 13 MINUTES

MONTH	10	HO	2417.	TOO	74.	TOT	70.	KT	.597	KD	.174						
ORIENTATION																	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SOUTH	0.	0.	0.	28.	45.	129.	161.	180.	187.	180.	161.	129.	85.	28.	0.	0.	0.
SOUTHWEST	0.	0.	0.	7.	21.	33.	57.	105.	147.	179.	195.	192.	161.	69.	0.	0.	0.
WEST	0.	0.	0.	7.	21.	33.	43.	49.	51.	101.	141.	163.	155.	75.	0.	0.	0.
NORTHWEST	0.	0.	0.	7.	21.	33.	43.	49.	51.	49.	43.	57.	70.	40.	0.	0.	0.
NORTH	0.	0.	0.	7.	21.	33.	43.	49.	51.	49.	43.	33.	21.	7.	0.	0.	0.
NORTHEAST	0.	0.	0.	40.	70.	57.	43.	49.	51.	49.	43.	33.	21.	7.	0.	0.	0.
EAST	0.	0.	0.	75.	155.	163.	141.	101.	51.	49.	43.	33.	21.	7.	0.	0.	0.
SOUTHEAST	0.	0.	0.	69.	161.	192.	195.	179.	147.	105.	57.	33.	21.	7.	0.	0.	0.
HORIZ.	0.	0.	0.	19.	78.	134.	178.	206.	215.	206.	178.	134.	78.	19.	0.	0.	0.
DAILY TOTAL RADIATION												SAG/DAYTIME SAT6S	SAT6D	SAG/ALL DAY SAT6S	SAT6G		
SOUTH												1351.	167.	243.	114.	149.	
SOUTHWEST												1166.	154.	220.	108.	138.	
WEST												838.	132.	179.	97.	119.	
NORTHWEST												463.	106.	132.	85.	97.	
NORTH												356.	98.	118.	82.	91.	
NORTHEAST												463.	106.	132.	85.	97.	
EAST												938.	132.	179.	97.	119.	
SOUTHEAST												1166.	154.	220.	108.	138.	
HORIZ.												1444.	174.	255.	117.	154.	

DAILY TOTAL RADIATION

SAG/DAYTIME SAT6S SAT6D

SAG/ALL DAY SAT6S SAT6D

MONTH 11	HO	1944.	TOD	63.	TOT	59.	KT	.524	KD	.185
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ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	4.	75.	119.	149.	167.	173.	167.	149.	119.	75.	4.	0.	0.	0.
SOUTHWEST	0.	0.	0.	2.	14.	26.	62.	101.	135.	159.	170.	161.	122.	6.	0.	0.	0.
WEST	0.	0.	0.	2.	14.	26.	35.	41.	43.	82.	111.	124.	107.	6.	0.	0.	0.
NORTHWEST	0.	0.	0.	2.	14.	26.	35.	41.	43.	41.	35.	30.	37.	3.	0.	0.	0.
NORTH	0.	0.	0.	2.	14.	26.	35.	41.	43.	41.	35.	26.	14.	2.	0.	0.	0.
NORTHEAST	0.	0.	0.	3.	37.	30.	35.	41.	43.	41.	35.	26.	14.	2.	0.	0.	0.
EAST	0.	0.	0.	6.	107.	124.	111.	82.	43.	41.	35.	26.	14.	2.	0.	0.	0.
SOUTHEAST	0.	0.	0.	6.	122.	161.	170.	159.	135.	101.	62.	26.	14.	2.	0.	0.	0.
HORIZ.	0.	0.	0.	3.	46.	93.	130.	154.	162.	154.	130.	93.	46.	3.	0.	0.	0.

DAILY TOTAL RADIATION

SAG/DAYTIME SAT6S SAT6D

SAG/ALL DAY SAT6S SAT6D

MONTH 12	HO	1756.	TOD	57.	TOT	54.	KT	.494	KD	.188
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ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	67.	112.	141.	158.	164.	158.	141.	112.	67.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	12.	25.	62.	97.	127.	148.	157.	147.	104.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	12.	23.	32.	38.	40.	74.	99.	109.	87.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	12.	23.	32.	38.	40.	36.	32.	23.	27.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	12.	23.	32.	38.	40.	38.	32.	23.	12.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	27.	23.	32.	38.	40.	38.	32.	23.	12.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	87.	109.	99.	74.	40.	38.	32.	23.	12.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	104.	147.	157.	148.	127.	97.	62.	25.	12.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	35.	78.	113.	135.	142.	135.	113.	78.	35.	0.	0.	0.	0.

DAILY TOTAL RADIATION

SAG/DAYTIME SAT6S SAT6D

SAG/ALL DAY SAT6S SAT6D



LOCATION LAKE CHARLES, LOUISIANA LATITUDE 30 DEGREES 13 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	134.	133.	127.	119.	118.	120.	124.	137.	152.	167.	152.	143.	135.
SOUTHWEST	118.	124.	127.	129.	135.	139.	139.	148.	152.	154.	147.	124.	135.
WEST	95.	108.	119.	130.	144.	151.	140.	140.	143.	132.	107.	96.	127.
NORTHWEST	78.	89.	101.	117.	134.	143.	138.	134.	122.	106.	86.	77.	110.
NORTH	76.	83.	91.	102.	116.	125.	122.	118.	110.	98.	83.	76.	100.
NORTHEAST	78.	89.	101.	117.	134.	143.	138.	134.	122.	106.	86.	77.	110.
EAST	95.	108.	119.	130.	144.	151.	147.	149.	143.	132.	107.	96.	127.
SOUTHEAST	118.	124.	127.	129.	135.	139.	139.	148.	152.	154.	134.	124.	135.
HORIZ.	124.	142.	162.	180.	203.	213.	202.	204.	192.	174.	138.	123.	171.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	197.	193.	179.	158.	149.	149.	154.	176.	207.	243.	225.	213.	187.
SOUTHWEST	170.	177.	178.	176.	179.	182.	180.	196.	206.	220.	192.	179.	186.
WEST	128.	148.	164.	179.	195.	203.	194.	198.	190.	179.	142.	129.	171.
NORTHWEST	96.	113.	132.	155.	173.	188.	179.	172.	154.	132.	104.	94.	141.
NORTH	92.	103.	113.	127.	146.	158.	151.	143.	133.	118.	100.	92.	123.
NORTHEAST	96.	113.	132.	155.	177.	188.	179.	172.	154.	132.	104.	94.	141.
EAST	128.	148.	164.	179.	195.	203.	194.	198.	190.	179.	142.	129.	171.
SOUTHEAST	170.	177.	178.	176.	179.	182.	180.	196.	206.	220.	192.	179.	186.
HORIZ.	180.	210.	242.	269.	300.	313.	291.	295.	276.	255.	200.	177.	251.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	86.	90.	92.	94.	98.	102.	104.	110.	114.	114.	98.	90.	99.
SOUTHWEST	80.	86.	92.	99.	107.	113.	113.	116.	114.	108.	90.	82.	100.
WEST	70.	79.	88.	100.	112.	120.	117.	117.	109.	97.	78.	71.	97.
NORTHWEST	62.	70.	79.	93.	107.	115.	112.	109.	99.	85.	69.	63.	89.
NORTH	61.	67.	74.	85.	97.	105.	104.	100.	93.	82.	68.	62.	83.
NORTHEAST	62.	70.	79.	93.	107.	115.	112.	109.	99.	85.	69.	63.	89.
EAST	70.	79.	88.	100.	112.	120.	117.	117.	109.	97.	78.	71.	97.
SOUTHEAST	80.	86.	92.	99.	107.	113.	113.	116.	114.	108.	90.	82.	100.
HORIZ.	82.	95.	110.	127.	146.	156.	149.	146.	134.	117.	92.	82.	120.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	114.	118.	118.	115.	115.	119.	121.	131.	141.	149.	129.	119.	124.
SOUTHWEST	102.	111.	118.	125.	133.	138.	137.	142.	141.	138.	115.	105.	125.
WEST	84.	97.	111.	126.	141.	150.	144.	143.	133.	119.	94.	84.	119.
NORTHWEST	70.	81.	95.	113.	131.	142.	136.	129.	115.	97.	77.	69.	105.
NORTH	69.	76.	85.	98.	113.	124.	120.	113.	104.	91.	76.	69.	95.
NORTHEAST	70.	81.	95.	113.	131.	142.	136.	129.	115.	97.	77.	69.	105.
EAST	84.	97.	111.	126.	141.	150.	144.	143.	133.	119.	94.	84.	119.
SOUTHEAST	102.	111.	118.	125.	133.	138.	137.	142.	141.	138.	115.	105.	125.
HORIZ.	106.	126.	150.	175.	201.	214.	200.	196.	176.	154.	119.	104.	160.

LOCATION LAUDER, WYOMING LATITUDE 42 DEGREES 48 MINUTES

MONTH	1	H0	1276.	TOD	20.	TOT	17.	KT	.650	KD	.162														
ORIENTATION: HOURLY SOLAR RADIATION																									
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20								
SOUTH	0.	0.	0.	0.	62.	154.	211.	244.	254.	244.	211.	154.	62.	0.	0.	0.	0.								
SOUTHWEST	0.	0.	0.	0.	6.	21.	79.	139.	189.	223.	233.	206.	103.	0.	0.	0.	0.								
WEST	0.	0.	0.	0.	6.	16.	25.	30.	32.	30.	134.	147.	87.	0.	0.	0.	0.								
NORTHWEST	0.	0.	0.	0.	6.	16.	25.	30.	32.	30.	25.	16.	23.	0.	0.	0.	0.								
NORTH	0.	0.	0.	0.	6.	16.	25.	30.	32.	30.	25.	16.	6.	0.	0.	0.	0.								
NORTHEAST	0.	0.	0.	0.	23.	16.	25.	30.	32.	30.	25.	16.	6.	0.	0.	0.	0.								
EAST	0.	0.	0.	0.	87.	147.	134.	90.	72.	30.	25.	16.	6.	0.	0.	0.	0.								
SOUTHEAST	0.	0.	0.	0.	103.	206.	233.	223.	189.	139.	79.	21.	6.	0.	0.	0.	0.								
HORIZ.	0.	0.	0.	0.	20.	70.	112.	140.	149.	140.	112.	70.	20.	0.	0.	0.	0.								
DAILY TOTAL RADIATION												SAG/DAYTIME SAGS SATGN						SAG/ALL DAY SATGN							
												1596.						151.		258.		68.		110.	
												1200.						119.		199.		55.		87.	
												566.						67.		104.		35.		50.	
												203.						37.		50.		23.		29.	
												186.						35.		48.		23.		28.	
												203.						37.		50.		23.		29.	
												566.						67.		104.		35.		50.	
												1200.						119.		199.		55.		87.	
												830.						88.		144.		43.		65.	

MONTH	2	HO	1855.	TOD	26.	TOT	23.	KT	.672	KD	.156					
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	13.	98.	162.	237.	247.	237.	208.	162.	98.	13.	0.	0.	0.
SOUTHWEST	0.	0.	0.	3.	14.	25.	72.	133.	186.	225.	242.	232.	181.	33.	0.	0.
WEST	0.	0.	0.	3.	14.	25.	33.	39.	41.	104.	154.	182.	166.	35.	0.	0.
NORTHWEST	0.	0.	0.	3.	14.	25.	33.	39.	41.	79.	33.	39.	63.	18.	0.	0.
NORTH	0.	0.	0.	3.	14.	25.	33.	39.	41.	79.	33.	25.	14.	3.	0.	0.
NORTHEAST	0.	0.	0.	18.	63.	39.	33.	39.	41.	79.	33.	25.	14.	3.	0.	0.
EAST	0.	0.	0.	35.	166.	182.	154.	104.	41.	79.	33.	25.	14.	3.	0.	0.
SOUTHEAST	0.	0.	0.	33.	181.	232.	242.	225.	186.	133.	72.	25.	14.	3.	0.	0.
HORIZ.	0.	0.	0.	7.	59.	114.	158.	186.	186.	158.	114.	59.	7.	0.	0.	0.
DAILY TOTAL RADIATION												1682.	147.	246.	77.	121.
												1346.	123.	202.	66.	101.
												796.	84.	130.	48.	69.
												348.	51.	72.	34.	43.
												270.	46.	62.	32.	39.
												348.	51.	72.	34.	43.
												796.	84.	130.	48.	69.
												1346.	123.	202.	66.	101.
												1245.	116.	189.	63.	95.

MONTH	3	HO	2513.	TOD	35.	TOT	31.	KT	.691	KD	.151	ORIENTATION:					DAILY TOTAL RADIATION		SAG/DAYTIME SAGS SATGN		SAG/ALL DAY SATGS												
												HOURLY SOLAR RADIATION																					
												4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
												0.	0.	0.	36.	94.	148.	191.	218.	218.	191.	148.	94.	36.	0.	0.	0.	0.	1600.	137.	221.	83.	125.
SOUTH												0.	0.	0.	11.	23.	34.	57.	120.	175.	215.	237.	235.	204.	127.	0.	0.	1439.	127.	202.	77.	115.	
SOUTHWEST												0.	0.	0.	11.	23.	34.	42.	47.	49.	115.	169.	204.	208.	151.	0.	0.	1053.	102.	157.	65.	93.	
WEST												0.	0.	0.	11.	23.	34.	42.	47.	49.	47.	42.	73.	103.	92.	0.	0.	564.	71.	100.	49.	64.	
NORTHWEST												0.	0.	0.	11.	23.	34.	42.	47.	49.	47.	42.	34.	23.	11.	0.	0.	363.	58.	77.	43.	52.	
NORTH												0.	0.	0.	11.	23.	34.	42.	47.	49.	47.	42.	34.	23.	11.	0.	0.	564.	71.	100.	49.	64.	
NORTHEAST												0.	0.	0.	92.	103.	73.	42.	47.	49.	47.	42.	34.	23.	11.	0.	0.	1053.	102.	157.	65.	93.	
EAST												0.	0.	0.	151.	208.	204.	169.	115.	49.	47.	42.	34.	23.	11.	0.	0.	1439.	127.	202.	77.	115.	
SOUTHEAST												0.	0.	0.	127.	204.	235.	237.	215.	175.	120.	57.	34.	23.	11.	0.	0.	1736.	146.	236.	87.	132.	
HORIZ.												0.	0.	0.	41.	104.	161.	206.	234.	244.	234.	206.	161.	104.	41.	0.	0.	146.	102.	157.	65.	93.	

LOCATION		LANDER, WYOMING		LATITUDE 42 DEGREES 48 MINUTES																		
MONTH	4	HO	3176.	TOD	45.	TOT	42.	KT	HOURLY SOLAR RADIATION										KD	.162		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	7.	23.	67.	111.	146.	168.	176.	168.	146.	111.	67.	23.	7.	0.	0.	1218.	115.	172.	81.	113.
SOUTHWEST	0.	0.	7.	19.	31.	42.	50.	93.	141.	176.	196.	197.	176.	132.	54.	0.	0.	1313.	120.	181.	84.	119.
WEST	0.	0.	7.	19.	31.	42.	50.	55.	56.	113.	160.	192.	201.	175.	85.	0.	0.	1186.	113.	168.	80.	111.
NORTHWEST	0.	0.	7.	19.	31.	42.	50.	55.	56.	55.	60.	99.	125.	127.	71.	0.	0.	797.	91.	128.	68.	89.
NORTH	0.	0.	19.	19.	31.	42.	50.	55.	56.	55.	50.	42.	31.	19.	19.	0.	0.	488.	73.	96.	58.	71.
NORTHEAST	0.	0.	71.	127.	125.	99.	60.	55.	56.	55.	50.	42.	31.	19.	7.	0.	0.	797.	91.	128.	68.	89.
EAST	0.	0.	85.	175.	201.	192.	160.	113.	56.	55.	50.	42.	31.	19.	7.	0.	0.	1186.	113.	168.	80.	111.
SOUTHEAST	0.	0.	54.	132.	176.	197.	196.	176.	141.	93.	50.	42.	31.	19.	7.	0.	0.	1313.	120.	181.	84.	119.
HORIZ.	0.	0.	21.	77.	135.	187.	226.	252.	260.	252.	226.	187.	135.	77.	21.	0.	0.	2056.	163.	258.	108.	162.
MONTH	5	HO	3607.	TOD	56.	TOT	52.	KT	HOURLY SOLAR RADIATION										KD	.174		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	3.	13.	25.	48.	83.	112.	130.	137.	130.	112.	83.	48.	25.	13.	3.	0.	965.	110.	151.	85.	111.
SOUTHWEST	0.	3.	13.	25.	36.	46.	54.	75.	114.	144.	160.	161.	146.	114.	65.	5.	0.	1161.	121.	171.	92.	123.
WEST	0.	3.	13.	25.	36.	46.	54.	58.	60.	107.	145.	171.	180.	165.	114.	10.	0.	1186.	122.	173.	93.	124.
NORTHWEST	0.	3.	13.	25.	36.	46.	54.	58.	60.	58.	77.	108.	130.	133.	104.	10.	0.	916.	107.	147.	84.	108.
NORTH	0.	6.	40.	39.	36.	46.	54.	58.	60.	58.	54.	46.	36.	39.	40.	6.	0.	619.	91.	117.	74.	90.
NORTHEAST	0.	10.	104.	133.	130.	108.	77.	58.	60.	58.	54.	46.	36.	25.	13.	3.	0.	916.	107.	147.	84.	108.
EAST	0.	10.	114.	165.	180.	171.	145.	107.	60.	58.	54.	46.	36.	25.	13.	3.	0.	1186.	122.	173.	93.	124.
SOUTHEAST	0.	5.	65.	114.	146.	161.	160.	144.	114.	75.	54.	46.	36.	25.	13.	3.	0.	1161.	121.	171.	92.	123.
HORIZ.	0.	5.	43.	95.	146.	190.	225.	247.	254.	247.	225.	190.	146.	95.	43.	5.	0.	2153.	177.	269.	126.	183.
MONTH	6	HO	3765.	TOD	65.	TOT	61.	KT	HOURLY SOLAR RADIATION										KD	.159		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	4.	15.	26.	42.	81.	112.	133.	140.	133.	112.	81.	42.	26.	15.	4.	0.	964.	118.	158.	94.	120.
SOUTHWEST	0.	4.	15.	26.	37.	47.	55.	71.	117.	151.	171.	174.	159.	126.	76.	15.	0.	1243.	133.	184.	104.	137.
WEST	0.	4.	15.	26.	37.	47.	55.	59.	61.	115.	161.	193.	205.	192.	142.	35.	0.	1347.	138.	194.	108.	143.
NORTHWEST	0.	4.	15.	26.	37.	47.	55.	59.	61.	59.	89.	126.	153.	160.	133.	37.	0.	1063.	123.	167.	98.	126.
NORTH	0.	20.	55.	51.	37.	47.	55.	59.	61.	59.	55.	47.	37.	51.	55.	20.	0.	709.	104.	133.	86.	104.
NORTHEAST	0.	37.	133.	160.	153.	126.	89.	59.	61.	59.	55.	47.	37.	26.	15.	4.	0.	1063.	123.	167.	98.	126.
EAST	0.	35.	142.	192.	205.	193.	161.	115.	61.	59.	55.	47.	37.	26.	15.	4.	0.	1347.	138.	194.	108.	143.
SOUTHEAST	0.	15.	76.	126.	159.	174.	171.	151.	117.	71.	55.	47.	37.	26.	15.	4.	0.	1243.	133.	184.	104.	137.
SORIZ.	0.	10.	56.	113.	169.	218.	256.	280.	288.	280.	256.	218.	169.	113.	56.	10.	0.	2493.	200.	304.	147.	212.





LOCATION		LANDER, WYOMING		LATITUDE 42 DEGREES 48 MINUTES																
MONTH 10	HO 1822.	TOD 48.	TOT 45.	HOURLY SOLAR RADIATION										KT	.666	KD	.158	SAG/DAYTIME SATGS		SAG/ALL DAY SATGS
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SATGS SATGD	SATGS SATGD
SOUTH	0.	0.	0.	10.	93.	158.	205.	235.	245.	235.	205.	158.	93.	10.	0.	0.	0.	1645.	167.	264.
SOUTHWEST	0.	0.	0.	3.	14.	25.	71.	132.	185.	222.	239.	226.	170.	23.	0.	0.	0.	1309.	143.	220.
WEST	0.	0.	0.	3.	14.	25.	33.	38.	40.	102.	151.	177.	156.	24.	0.	0.	0.	763.	103.	149.
NORTHWEST	0.	0.	0.	3.	14.	25.	33.	38.	40.	38.	33.	38.	59.	13.	0.	0.	0.	333.	72.	92.
NORTH	0.	0.	0.	3.	14.	25.	33.	38.	40.	38.	33.	25.	14.	3.	0.	0.	0.	265.	67.	83.
NORTHEAST	0.	0.	0.	13.	59.	38.	33.	38.	40.	38.	33.	25.	14.	3.	0.	0.	0.	333.	72.	92.
EAST	0.	0.	0.	24.	150.	177.	151.	102.	40.	38.	33.	25.	14.	3.	0.	0.	0.	763.	103.	149.
SOUTHEAST	0.	0.	0.	23.	170.	226.	239.	222.	185.	132.	71.	25.	14.	3.	0.	0.	0.	1309.	143.	220.
HORIZ.	0.	0.	0.	6.	56.	111.	155.	183.	193.	183.	155.	111.	56.	6.	0.	0.	0.	1212.	136.	207.
MONTH 11	HO 1264.	TOD 33.	TOT 30.	HOURLY SOLAR RADIATION										KT	.589	KD	.176	SAG/DAYTIME SATGS <th>SAG/ALL DAY SATGS</th>		SAG/ALL DAY SATGS
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SATGS SATGD	SATGS SATGD
SOUTH	0.	0.	0.	0.	51.	132.	182.	211.	221.	211.	182.	132.	51.	0.	0.	0.	0.	1372.	146.	238.
SOUTHWEST	0.	0.	0.	0.	6.	21.	71.	122.	165.	194.	201.	175.	83.	0.	0.	0.	0.	1038.	119.	188.
WEST	0.	0.	0.	0.	6.	16.	25.	30.	32.	81.	117.	126.	70.	0.	0.	0.	0.	502.	75.	108.
NORTHWEST	0.	0.	0.	0.	6.	16.	25.	30.	32.	30.	25.	16.	20.	0.	0.	0.	0.	199.	50.	63.
NORTH	0.	0.	0.	0.	6.	16.	25.	30.	32.	30.	25.	16.	6.	0.	0.	0.	0.	186.	49.	61.
NORTHEAST	0.	0.	0.	0.	20.	16.	25.	30.	32.	30.	25.	16.	6.	0.	0.	0.	0.	199.	50.	63.
EAST	0.	0.	0.	0.	70.	128.	117.	81.	32.	30.	25.	16.	6.	0.	0.	0.	0.	502.	75.	108.
SOUTHEAST	0.	0.	0.	0.	83.	175.	201.	194.	165.	122.	71.	21.	6.	0.	0.	0.	0.	1038.	119.	188.
HORIZ.	0.	0.	0.	0.	18.	62.	101.	125.	134.	125.	101.	62.	18.	0.	0.	0.	0.	746.	95.	145.
MONTH 12	HO 1059.	TOD 24.	TOT 20.	HOURLY SOLAR RADIATION										KT	.643	KD	.163	SAG/DAYTIME SATGS <th>SAG/ALL DAY SATGS</th>		SAG/ALL DAY SATGS
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SATGS SATGD	SATGS SATGD
SOUTH	0.	0.	0.	0.	28.	143.	209.	245.	257.	245.	209.	143.	28.	0.	0.	0.	0.	1508.	155.	262.
SOUTHWEST	0.	0.	0.	0.	3.	23.	81.	140.	190.	222.	227.	187.	44.	0.	0.	0.	0.	1117.	121.	200.
WEST	0.	0.	0.	0.	3.	13.	21.	26.	28.	84.	125.	128.	36.	0.	0.	0.	0.	465.	64.	97.
NORTHWEST	0.	0.	0.	0.	3.	13.	21.	26.	28.	26.	21.	13.	9.	0.	0.	0.	0.	160.	38.	49.
NORTH	0.	0.	0.	0.	3.	13.	21.	26.	28.	26.	21.	13.	3.	0.	0.	0.	0.	155.	37.	48.
NORTHEAST	0.	0.	0.	0.	9.	13.	21.	26.	28.	26.	21.	13.	3.	0.	0.	0.	0.	160.	38.	49.
EAST	0.	0.	0.	0.	36.	128.	125.	84.	28.	26.	21.	13.	3.	0.	0.	0.	0.	465.	64.	97.
SOUTHEAST	0.	0.	0.	0.	44.	187.	227.	222.	190.	140.	81.	23.	3.	0.	0.	0.	0.	1117.	121.	200.
SORIZ.	0.	0.	0.	0.	8.	52.	94.	121.	131.	121.	94.	52.	8.	0.	0.	0.	0.	680.	83.	131.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	151.	147.	137.	115.	110.	118.	133.	146.	160.	167.	146.	155.	140.
SOUTHWEST	119.	123.	127.	120.	121.	133.	146.	151.	151.	143.	119.	121.	131.
WEST	67.	84.	102.	113.	122.	138.	147.	143.	127.	103.	75.	64.	107.
NORTHWEST	37.	51.	71.	91.	107.	123.	130.	120.	98.	72.	50.	39.	82.
NORTH	35.	46.	58.	73.	91.	104.	110.	102.	86.	67.	49.	37.	71.
NORTHEAST	37.	51.	71.	91.	107.	123.	130.	120.	98.	72.	50.	38.	82.
EAST	67.	84.	102.	113.	122.	138.	147.	143.	127.	103.	75.	64.	107.
SOUTHEAST	119.	123.	127.	120.	121.	133.	146.	151.	151.	143.	119.	121.	131.
HORIZ.	88.	116.	146.	163.	177.	200.	209.	197.	171.	136.	95.	83.	148.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	258.	246.	221.	172.	151.	158.	177.	202.	236.	264.	238.	262.	215.
SOUTHWEST	199.	202.	202.	181.	171.	184.	200.	212.	219.	220.	188.	200.	198.
WEST	104.	130.	157.	168.	173.	194.	203.	198.	178.	149.	108.	97.	155.
NORTHWEST	50.	72.	100.	128.	147.	167.	172.	156.	126.	92.	63.	49.	110.
NORTH	48.	62.	77.	96.	117.	133.	137.	124.	105.	83.	61.	48.	91.
NORTHEAST	50.	72.	100.	128.	147.	167.	172.	156.	126.	92.	63.	49.	110.
EAST	104.	130.	157.	168.	173.	194.	203.	198.	178.	149.	108.	97.	155.
SOUTHEAST	199.	202.	202.	181.	171.	184.	200.	212.	219.	220.	188.	200.	198.
HORIZ.	144.	189.	236.	258.	269.	304.	311.	292.	256.	207.	145.	131.	229.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	68.	77.	83.	81.	85.	94.	106.	110.	107.	97.	74.	69.	88.
SOUTHWEST	55.	66.	77.	84.	92.	104.	114.	113.	102.	87.	63.	56.	85.
WEST	35.	48.	65.	80.	93.	108.	115.	108.	91.	69.	46.	35.	74.
NORTHWEST	23.	34.	49.	68.	84.	98.	104.	95.	76.	55.	36.	26.	62.
NORTH	23.	32.	43.	58.	74.	86.	92.	85.	70.	53.	36.	25.	56.
NORTHEAST	23.	34.	49.	68.	84.	98.	104.	95.	76.	55.	36.	26.	62.
EAST	35.	48.	65.	80.	93.	108.	115.	108.	91.	69.	46.	35.	74.
SOUTHEAST	55.	66.	77.	84.	92.	104.	114.	113.	102.	87.	63.	56.	85.
HORIZ.	43.	63.	87.	108.	126.	147.	152.	138.	113.	83.	54.	42.	96.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	110.	121.	125.	113.	111.	120.	133.	142.	145.	140.	110.	108.	123.
SOUTHWEST	87.	101.	115.	119.	123.	137.	147.	147.	137.	121.	90.	85.	117.
WEST	50.	69.	93.	111.	124.	143.	149.	139.	116.	89.	59.	47.	99.
NORTHWEST	29.	43.	64.	89.	108.	126.	130.	116.	90.	64.	42.	30.	77.
NORTH	28.	39.	52.	71.	90.	104.	108.	98.	79.	60.	41.	29.	67.
NORTHEAST	29.	43.	64.	89.	108.	126.	130.	116.	90.	64.	42.	30.	77.
EAST	50.	69.	93.	111.	124.	143.	149.	139.	116.	89.	59.	47.	99.
SOUTHEAST	87.	101.	115.	119.	123.	137.	147.	147.	137.	121.	90.	85.	117.
HORIZ.	65.	95.	132.	162.	183.	212.	215.	192.	155.	115.	73.	60.	138.

LOCATION		LAS VEGAS, NEVADA			LATITUDE			36 DEGREES			5 MINUTES									
MONTH	1	HO	1644.	TOD	47.	TOT	44.	KT	.654	KD	.161									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL, RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD
SOUTH	0.	0.	0.	0.	91.	162.	208.	236.	245.	236.	208.	162.	91.	0.	0.	0.	0.	1639.	174.	277.
SOUTHWEST	0.	0.	0.	0.	11.	22.	78.	135.	144.	220.	235.	220.	151.	0.	0.	0.	0.	1256.	145.	224.
WEST	0.	0.	0.	0.	11.	22.	31.	37.	39.	96.	142.	162.	129.	0.	0.	0.	0.	668.	99.	141.
NORTHWEST	0.	0.	0.	0.	11.	22.	31.	37.	39.	37.	31.	22.	38.	0.	0.	0.	0.	265.	68.	85.
NORTH	0.	0.	0.	0.	11.	22.	31.	37.	39.	37.	31.	22.	11.	0.	0.	0.	0.	238.	66.	81.
NORTHEAST	0.	0.	0.	0.	38.	22.	31.	37.	39.	37.	31.	22.	11.	0.	0.	0.	0.	265.	68.	85.
EAST	0.	0.	0.	0.	129.	162.	142.	96.	39.	37.	31.	22.	11.	0.	0.	0.	0.	668.	99.	141.
SOUTHEAST	0.	0.	0.	0.	151.	220.	235.	220.	184.	135.	78.	22.	11.	0.	0.	0.	0.	1256.	145.	224.
HORIZ.	0.	0.	0.	0.	39.	96.	141.	170.	180.	170.	141.	96.	39.	0.	0.	0.	0.	1074.	130.	198.
MONTH	2	HO	2185.	TOD	54.	TOT	50.	KT	.697	KD	.150									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD
SOUTH	0.	0.	0.	28.	106.	164.	207.	233.	242.	233.	207.	164.	106.	28.	0.	0.	0.	1720.	175.	273.
SOUTHWEST	0.	0.	0.	5.	18.	29.	67.	130.	185.	226.	248.	244.	202.	73.	0.	0.	0.	1428.	154.	236.
WEST	0.	0.	0.	5.	18.	29.	39.	44.	46.	113.	166.	198.	190.	78.	0.	0.	0.	927.	119.	172.
NORTHWEST	0.	0.	0.	5.	18.	29.	39.	44.	46.	44.	39.	53.	77.	40.	0.	0.	0.	436.	84.	109.
NORTH	0.	0.	0.	5.	18.	29.	39.	44.	46.	44.	39.	29.	18.	5.	0.	0.	0.	316.	76.	94.
NORTHEAST	0.	0.	0.	40.	77.	53.	39.	44.	46.	44.	39.	29.	18.	5.	0.	0.	0.	436.	84.	109.
EAST	0.	0.	0.	78.	190.	198.	166.	113.	46.	44.	39.	29.	18.	5.	0.	0.	0.	927.	119.	172.
SOUTHEAST	0.	0.	0.	73.	202.	244.	248.	226.	185.	130.	67.	29.	18.	5.	0.	0.	0.	1428.	154.	236.
HORIZ.	0.	0.	0.	14.	78.	141.	190.	221.	232.	221.	190.	141.	78.	14.	0.	0.	0.	1523.	161.	248.
MONTH	3	HO	2763.	TOD	60.	TOT	56.	KT	.728	KD	.136									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD
SOUTH	0.	0.	0.	36.	93.	145.	186.	211.	220.	211.	186.	145.	93.	36.	0.	0.	0.	1562.	160.	242.
SOUTHWEST	0.	0.	0.	11.	24.	36.	46.	112.	171.	216.	243.	245.	218.	143.	0.	0.	0.	1466.	154.	231.
WEST	0.	0.	0.	11.	24.	36.	45.	51.	53.	124.	184.	223.	229.	172.	0.	0.	0.	1154.	134.	194.
NORTHWEST	0.	0.	0.	11.	24.	36.	45.	51.	53.	51.	45.	91.	121.	108.	0.	0.	0.	636.	101.	134.
NORTH	0.	0.	0.	11.	24.	36.	45.	51.	53.	51.	45.	36.	24.	11.	0.	0.	0.	387.	85.	105.
NORTHEAST	0.	0.	0.	108.	121.	91.	45.	51.	53.	51.	45.	36.	24.	11.	0.	0.	0.	636.	101.	134.
EAST	0.	0.	0.	172.	229.	223.	184.	124.	53.	51.	45.	36.	24.	11.	0.	0.	0.	1154.	134.	194.
SOUTHEAST	0.	0.	0.	143.	218.	245.	243.	216.	171.	112.	46.	36.	24.	11.	0.	0.	0.	1466.	154.	231.
HORIZ.	0.	0.	0.	48.	121.	187.	238.	270.	281.	270.	238.	187.	121.	48.	0.	0.	0.	2011.	189.	294.





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ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	33.	88.	140.	180.	205.	214.	205.	180.	140.	88.	33.	0.	0.	0.	1507.	188.	267.	132.	172.
SOUTHWEST	0.	0.	0.	11.	24.	36.	46.	110.	167.	210.	235.	236.	207.	130.	0.	0.	0.	1414.	182.	255.	129.	166.
WEST	0.	0.	0.	0.	11.	24.	36.	45.	51.	53.	122.	179.	216.	158.	0.	0.	0.	1115.	161.	219.	119.	148.
NORTHWEST	0.	0.	0.	11.	24.	36.	45.	51.	53.	51.	45.	90.	116.	99.	0.	0.	0.	624.	128.	160.	102.	118.
NORTH	0.	0.	0.	11.	24.	36.	45.	51.	53.	51.	45.	36.	24.	11.	0.	0.	0.	390.	112.	132.	84.	104.
NORTHEAST	0.	0.	0.	99.	116.	90.	45.	51.	53.	51.	45.	36.	24.	11.	0.	0.	0.	624.	128.	160.	102.	118.
EAST	0.	0.	0.	158.	218.	216.	179.	122.	53.	51.	45.	36.	24.	11.	0.	0.	0.	1115.	161.	219.	119.	148.
SOUTHEAST	0.	0.	0.	130.	207.	236.	233.	210.	167.	110.	46.	36.	24.	11.	0.	0.	0.	1414.	182.	255.	129.	166.
HORIZ.	0.	0.	0.	46.	117.	183.	233.	266.	277.	266.	233.	183.	117.	46.	0.	0.	0.	1967.	219.	322.	148.	200.

LOCATION	LAS VEGAS, NEVADA		LATITUDE 36 DEGREES		5 MINUTES																	
MONTH 10	HO 2151.	TON 72.	TOT 67.	KT .704	KD .147																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAT6S	SAT6S	SAG/ALL DAY SAT6S	
SOUTH	0.	0.	0.	24.	105.	165.	210.	237.	247.	237.	210.	165.	105.	24.	0.	0.	0.	1729.	193.	293.	123.	168.
SOUTHWEST	0.	0.	0.	4.	17.	29.	68.	132.	148.	230.	251.	245.	199.	62.	0.	0.	0.	1424.	172.	254.	113.	150.
WEST	0.	0.	0.	4.	17.	29.	38.	44.	46.	113.	167.	198.	186.	66.	0.	0.	0.	909.	136.	188.	97.	120.
NORTHWEST	0.	0.	0.	4.	17.	29.	38.	44.	46.	44.	38.	52.	75.	34.	0.	0.	0.	421.	101.	125.	81.	92.
NORTH	0.	0.	0.	4.	17.	29.	38.	44.	46.	44.	38.	29.	17.	4.	0.	0.	0.	310.	94.	111.	77.	85.
NORTHEAST	0.	0.	0.	34.	75.	52.	38.	44.	46.	44.	38.	29.	17.	4.	0.	0.	0.	421.	101.	125.	81.	92.
EAST	0.	0.	0.	66.	186.	198.	167.	113.	46.	44.	38.	29.	17.	4.	0.	0.	0.	909.	136.	188.	97.	120.
SOUTHEAST	0.	0.	0.	62.	199.	245.	251.	230.	148.	132.	68.	29.	17.	4.	0.	0.	0.	1424.	172.	254.	113.	150.
HORIZ.	0.	0.	0.	12.	76.	140.	190.	222.	233.	222.	190.	140.	76.	12.	0.	0.	0.	1514.	178.	265.	116.	156.
MONTH 11	HO 1631.	TON 58.	TOT 54.	KT .657	KD .160																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAT6S	SAT6S	SAG/ALL DAY SAT6S	
SOUTH	0.	0.	0.	0.	89.	162.	209.	237.	247.	237.	209.	162.	89.	0.	0.	0.	0.	1643.	185.	289.	107.	150.
SOUTHWEST	0.	0.	0.	0.	10.	22.	78.	136.	146.	221.	236.	220.	148.	0.	0.	0.	0.	1257.	155.	234.	94.	127.
WEST	0.	0.	0.	0.	10.	22.	31.	36.	38.	97.	142.	162.	126.	0.	0.	0.	0.	664.	109.	151.	75.	93.
NORTHWEST	0.	0.	0.	0.	10.	22.	31.	36.	38.	36.	31.	22.	37.	0.	0.	0.	0.	263.	78.	95.	62.	69.
NORTH	0.	0.	0.	0.	10.	22.	31.	36.	38.	36.	31.	22.	10.	0.	0.	0.	0.	236.	76.	91.	61.	68.
NORTHEAST	0.	0.	0.	0.	37.	22.	31.	36.	38.	36.	31.	22.	10.	0.	0.	0.	0.	263.	78.	95.	62.	69.
EAST	0.	0.	0.	0.	126.	162.	142.	97.	38.	36.	31.	22.	10.	0.	0.	0.	0.	664.	109.	151.	75.	93.
SOUTHEAST	0.	0.	0.	0.	148.	220.	236.	221.	186.	136.	78.	22.	10.	0.	0.	0.	0.	1257.	155.	234.	94.	127.
HORIZ.	0.	0.	0.	0.	38.	95.	141.	171.	181.	171.	141.	95.	38.	0.	0.	0.	0.	1071.	141.	208.	88.	116.
MONTH 12	HO 1432.	TON 50.	TOT 47.	KT .668	KD .157																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAT6S	SAT6S	SAG/ALL DAY SAT6S	
SOUTH	0.	0.	0.	0.	80.	167.	220.	250.	260.	250.	220.	167.	80.	0.	0.	0.	0.	1692.	187.	298.	101.	145.
SOUTHWEST	0.	0.	0.	0.	8.	27.	84.	143.	194.	229.	242.	221.	127.	0.	0.	0.	0.	1275.	153.	237.	88.	121.
WEST	0.	0.	0.	0.	8.	19.	27.	33.	35.	94.	139.	156.	104.	0.	0.	0.	0.	615.	100.	140.	67.	83.
NORTHWEST	0.	0.	0.	0.	8.	19.	27.	33.	35.	33.	27.	19.	25.	0.	0.	0.	0.	226.	68.	83.	54.	60.
NORTH	0.	0.	0.	0.	8.	19.	27.	33.	35.	33.	27.	19.	8.	0.	0.	0.	0.	208.	67.	81.	53.	59.
NORTHEAST	0.	0.	0.	0.	25.	19.	27.	33.	35.	33.	27.	19.	8.	0.	0.	0.	0.	226.	68.	83.	54.	60.
EAST	0.	0.	0.	0.	104.	156.	139.	94.	35.	33.	27.	19.	8.	0.	0.	0.	0.	615.	100.	140.	67.	83.
SOUTHEAST	0.	0.	0.	0.	127.	221.	242.	220.	194.	143.	84.	27.	8.	0.	0.	0.	0.	1275.	153.	237.	88.	121.
HORIZ.	0.	0.	0.	0.	26.	82.	128.	158.	168.	158.	128.	82.	26.	0.	0.	0.	0.	959.	128.	191.	78.	103.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	174.	175.	160.	137.	131.	134.	145.	152.	188.	193.	185.	187.	164.
SOUTHWEST	145.	154.	154.	149.	152.	157.	164.	174.	182.	172.	155.	153.	159.
WEST	99.	119.	134.	146.	161.	170.	171.	170.	160.	136.	109.	100.	140.
NORTHWEST	68.	84.	101.	122.	141.	154.	155.	147.	128.	101.	78.	68.	112.
NORTH	66.	76.	85.	99.	116.	129.	132.	124.	112.	94.	76.	67.	98.
NORTHEAST	68.	84.	101.	122.	141.	154.	155.	147.	128.	101.	78.	68.	112.
EAST	99.	119.	134.	146.	160.	170.	171.	170.	161.	136.	109.	100.	140.
SOUTHEAST	145.	154.	154.	149.	152.	157.	164.	174.	182.	172.	155.	153.	159.
HORIZ.	130.	161.	189.	208.	233.	247.	240.	235.	219.	178.	141.	128.	192.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	277.	273.	242.	192.	171.	170.	184.	216.	267.	293.	289.	298.	239.
SOUTHWEST	224.	236.	231.	214.	208.	211.	217.	236.	255.	254.	234.	237.	230.
WEST	141.	172.	194.	208.	222.	232.	230.	230.	219.	188.	151.	140.	194.
NORTHWEST	85.	109.	134.	165.	189.	204.	201.	188.	160.	125.	95.	83.	145.
NORTH	81.	94.	105.	123.	144.	161.	161.	148.	132.	111.	91.	81.	119.
NORTHEAST	85.	109.	134.	165.	189.	204.	201.	188.	160.	125.	95.	83.	145.
EAST	141.	172.	194.	208.	222.	232.	230.	230.	219.	188.	151.	140.	194.
SOUTHEAST	224.	236.	231.	214.	208.	211.	217.	236.	255.	254.	234.	237.	230.
HORIZ.	198.	248.	294.	322.	352.	368.	351.	344.	322.	265.	208.	191.	289.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	97.	106.	107.	103.	105.	111.	120.	127.	132.	123.	107.	101.	111.
SOUTHWEST	84.	96.	104.	109.	117.	125.	131.	133.	129.	113.	94.	88.	110.
WEST	66.	80.	94.	108.	122.	133.	135.	131.	119.	97.	75.	67.	102.
NORTHWEST	53.	64.	77.	94.	111.	123.	126.	111.	102.	81.	62.	54.	89.
NORTH	52.	61.	69.	82.	96.	108.	113.	106.	94.	77.	61.	53.	81.
NORTHEAST	53.	64.	77.	94.	111.	123.	126.	118.	102.	81.	62.	54.	89.
EAST	66.	80.	94.	108.	122.	133.	135.	131.	119.	97.	75.	67.	102.
SOUTHEAST	84.	96.	104.	109.	117.	125.	131.	133.	129.	113.	94.	88.	110.
HORIZ.	79.	99.	121.	142.	165.	179.	175.	167.	148.	116.	88.	78.	130.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	140.	151.	147.	133.	128.	133.	143.	156.	172.	168.	150.	145.	147.
SOUTHWEST	117.	134.	142.	145.	150.	157.	162.	167.	166.	150.	127.	121.	145.
WEST	83.	104.	124.	142.	159.	170.	170.	164.	148.	120.	93.	83.	130.
NORTHWEST	60.	76.	94.	118.	139.	153.	153.	141.	118.	92.	69.	60.	106.
NORTH	58.	69.	79.	95.	113.	127.	129.	119.	104.	85.	68.	59.	92.
NORTHEAST	60.	76.	94.	118.	139.	153.	153.	141.	118.	92.	69.	60.	106.
EAST	83.	104.	124.	142.	159.	170.	170.	164.	148.	120.	93.	83.	130.
SOUTHEAST	117.	134.	142.	145.	150.	157.	162.	167.	166.	150.	127.	121.	145.
HORIZ.	107.	139.	174.	204.	235.	252.	241.	227.	200.	156.	116.	103.	179.

LOCATION	LEMONT, ILLINOIS												LATITUDE 41 DEGREES 40 MINUTES																												
MONTH	1	HO	1338.	TOD	29.	TOT	24.	KT	.464	KD	.186	DAILY TOTAL RADIATION												SAG/DAYTIME SAG/ALL DAY SATGS SATGD																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SAG/DAYTIME SAG/ALL DAY SATGS SATGD																							
SOUTH	0.	0.	0.	0.	42.	96.	130.	149.	156.	149.	130.	96.	42.	0.	0.	0.	0.	109. 174. 56. 81.																							
SOUTHWEST	0.	0.	0.	0.	7.	19.	55.	90.	119.	138.	143.	126.	67.	0.	0.	0.	0.	91. 141. 48. 68.																							
WEST	0.	0.	0.	0.	7.	17.	25.	29.	31.	63.	87.	92.	57.	0.	0.	0.	0.	62. 89. 37. 48.																							
NORTHWEST	0.	0.	0.	0.	7.	17.	25.	29.	31.	29.	25.	17.	18.	0.	0.	0.	0.	45. 58. 30. 35.																							
NORTH	0.	0.	0.	0.	7.	17.	25.	29.	31.	29.	25.	17.	7.	0.	0.	0.	0.	44. 56. 30. 35.																							
NORTHEAST	0.	0.	0.	0.	18.	17.	25.	29.	31.	29.	25.	17.	7.	0.	0.	0.	0.	45. 58. 30. 35.																							
EAST	0.	0.	0.	0.	57.	92.	87.	63.	31.	29.	25.	17.	7.	0.	0.	0.	0.	62. 89. 37. 48.																							
SOUTHEAST	0.	0.	0.	0.	67.	126.	143.	138.	119.	90.	55.	19.	7.	0.	0.	0.	0.	91. 141. 48. 68.																							
HORIZ.	0.	0.	0.	0.	18.	54.	83.	102.	108.	102.	83.	54.	18.	0.	0.	0.	0.	79. 120. 44. 60.																							
MONTH 2																		.188																							
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION												SAG/DAYTIME SAG/ALL DAY SATGS SATGD											
SOUTH	0.	0.	0.	11.	65.	106.	137.	155.	162.	155.	137.	106.	65.	11.	0.	0.	0.	1111. 110. 175. 62. 91.																							
SOUTHWEST	0.	0.	0.	4.	15.	26.	56.	94.	126.	149.	157.	149.	116.	25.	0.	0.	0.	916. 96. 150. 56. 80.																							
WEST	0.	0.	0.	4.	15.	26.	34.	39.	41.	77.	106.	120.	107.	27.	0.	0.	0.	595. 73. 108. 45. 61.																							
NORTHWEST	0.	0.	0.	4.	15.	26.	34.	39.	41.	39.	34.	35.	45.	15.	0.	0.	0.	325. 54. 73. 37. 45.																							
NORTH	0.	0.	0.	4.	15.	26.	34.	39.	41.	39.	34.	26.	15.	4.	0.	0.	0.	275. 50. 66. 35. 42.																							
NORTHEAST	0.	0.	0.	15.	45.	35.	34.	39.	41.	39.	34.	26.	15.	4.	0.	0.	0.	325. 54. 73. 37. 45.																							
EAST	0.	0.	0.	27.	107.	120.	106.	77.	41.	39.	34.	26.	15.	4.	0.	0.	0.	595. 73. 108. 45. 61.																							
SOUTHEAST	0.	0.	0.	25.	116.	149.	157.	149.	126.	94.	56.	26.	15.	4.	0.	0.	0.	916. 96. 150. 56. 80.																							
HORIZ.	0.	0.	0.	8.	48.	88.	119.	139.	146.	139.	119.	88.	48.	8.	0.	0.	0.	948. 98. 154. 57. 82.																							
MONTH 3																		.185																							
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION												SAG/DAYTIME SAG/ALL DAY SATGS SATGD											
SOUTH	0.	0.	0.	27.	67.	104.	133.	151.	157.	151.	133.	104.	67.	27.	0.	0.	0.	1119. 111. 169. 72. 101.																							
SOUTHWEST	0.	0.	0.	12.	24.	34.	50.	91.	125.	150.	162.	158.	136.	84.	0.	0.	0.	1027. 105. 159. 69. 96.																							
WEST	0.	0.	0.	12.	24.	34.	42.	48.	49.	89.	121.	140.	138.	99.	0.	0.	0.	798. 91. 132. 62. 83.																							
NORTHWEST	0.	0.	0.	12.	24.	34.	42.	48.	49.	48.	42.	60.	74.	63.	0.	0.	0.	496. 71. 97. 52. 65.																							
NORTH	0.	0.	0.	12.	24.	34.	42.	48.	49.	48.	42.	34.	24.	12.	0.	0.	0.	369. 63. 82. 48. 58.																							
NORTHEAST	0.	0.	0.	63.	74.	60.	42.	48.	49.	48.	42.	34.	24.	12.	0.	0.	0.	496. 71. 97. 52. 65.																							
EAST	0.	0.	0.	99.	138.	140.	121.	89.	49.	48.	42.	34.	24.	12.	0.	0.	0.	798. 91. 132. 62. 83.																							
SOUTHEAST	0.	0.	0.	84.	136.	158.	162.	150.	125.	91.	50.	34.	24.	12.	0.	0.	0.	1027. 105. 159. 69. 96.																							
SORIZ.	0.	0.	0.	34.	81.	123.	156.	177.	184.	177.	156.	123.	81.	34.	0.	0.	0.	1329. 124. 194. 79. 114.																							



LOCATION LEMONT, ILLINOIS LATITUDE 41 DEGREES 40 MINUTES

MONTH	4	H0	3201.	TOD	50.	TOT	48.	KT	.477	KD	.187											
HOURLY SOLAR RADIATION																						
ORIENTATION																						
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	7.	21.	51.	80.	103.	118.	123.	118.	103.	80.	51.	21.	7.	0.	0.	885.	100.	142.	76.	99.
SOUTHWEST	0.	0.	7.	19.	31.	41.	48.	74.	103.	124.	134.	132.	117.	86.	34.	0.	0.	951.	104.	149.	78.	103.
WEST	0.	0.	7.	19.	31.	41.	48.	53.	55.	58.	114.	130.	132.	112.	53.	0.	0.	883.	100.	141.	76.	99.
NORTHWEST	0.	0.	7.	19.	31.	41.	48.	53.	55.	53.	56.	76.	88.	84.	44.	0.	0.	654.	87.	118.	69.	86.
NORTH	0.	0.	14.	19.	31.	41.	48.	53.	55.	53.	48.	41.	31.	19.	14.	0.	0.	466.	76.	98.	63.	75.
NORTHEAST	0.	0.	44.	84.	88.	76.	56.	53.	55.	53.	48.	41.	31.	19.	7.	0.	0.	654.	87.	118.	69.	86.
EAST	0.	0.	53.	112.	132.	130.	114.	88.	55.	53.	48.	41.	31.	19.	7.	0.	0.	883.	100.	141.	76.	99.
SOUTHEAST	0.	0.	34.	86.	117.	132.	134.	124.	103.	74.	48.	41.	31.	19.	7.	0.	0.	951.	104.	149.	78.	103.
HORIZ.	0.	0.	18.	59.	101.	138.	167.	185.	191.	145.	167.	138.	101.	59.	18.	0.	0.	1528.	137.	209.	97.	137.

[illegible]

MONTH	6	H0	3764.	T00	71.	TOT	69.	KT	.542	KD	.182										
ORIENTATION																					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY		
																	SATGS	SATGD	SATGS	SATGD	
SOUTH	0.	4.	15.	27.	39.	68.	93.	108.	114.	108.	93.	68.	39.	27.	15.	4.	0.	821.	116.	150.	97.
SOUTHWEST	0.	4.	15.	27.	37.	47.	54.	65.	98.	122.	135.	136.	123.	96.	58.	10.	0.	1028.	127.	170.	104.
WEST	0.	4.	15.	27.	37.	47.	54.	59.	61.	99.	130.	151.	157.	144.	104.	22.	0.	1111.	132.	178.	107.
NORTHWEST	0.	4.	15.	27.	37.	47.	54.	59.	61.	59.	81.	105.	121.	123.	98.	23.	0.	915.	121.	159.	100.
NORTH	0.	13.	44.	45.	37.	47.	54.	59.	61.	59.	54.	47.	37.	45.	44.	13.	0.	660.	107.	135.	92.
NORTHEAST	0.	23.	98.	123.	121.	105.	81.	59.	61.	59.	54.	47.	37.	27.	15.	4.	0.	915.	121.	159.	100.
EAST	0.	22.	104.	144.	157.	151.	130.	99.	61.	59.	54.	47.	37.	27.	15.	4.	0.	1111.	132.	178.	107.
SOUTHEAST	0.	10.	58.	96.	123.	136.	135.	122.	98.	65.	54.	47.	37.	27.	15.	4.	0.	1028.	127.	170.	104.
NORTZ.	0.	9.	46.	91.	139.	178.	209.	229.	235.	229.	209.	178.	139.	93.	46.	9.	0.	2041.	182.	268.	139.

LOCATION	LEMONT, ILLINOIS	LATITUDE	41 DEGRFS	40 MINUTES
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MONTH	7	HO	3612.	TOD	76.	TOT	74.	KT	.542	KD	.182
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ORIENTATION!	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0	2	13	25	43	74	100	116	121	116	100	74	43	25	13	2	0	868	124	162	103	126
SOUTHWEST	0	2	13	25	36	46	53	70	103	128	141	141	127	98	55	4	0	1041	134	179	109	137
WEST	0	2	13	25	36	46	53	58	60	99	131	152	157	141	95	6	0	1073	136	182	110	139
NORTHWEST	0	2	13	25	36	46	53	58	60	58	76	100	116	116	87	6	0	851	124	160	103	125
NORTH	0	4	36	38	36	46	53	58	60	58	53	46	36	38	36	4	0	599	109	135	94	110
NORTHEAST	0	6	87	116	116	100	76	58	60	58	53	46	36	25	13	2	0	851	124	160	103	125
EAST	0	6	95	141	157	152	131	99	60	58	53	46	36	25	13	2	0	1073	136	182	110	139
SOUTHEAST	0	4	55	98	127	141	141	128	103	70	53	46	36	25	13	2	0	1041	134	179	109	137
HORIZ.	0	4	38	86	132	173	205	225	232	225	205	173	132	86	38	4	0	1958	196	270	141	192

	MONTH	8	H0	3179.	TOD	74.	TOT	71.	KT	.559	KD	.180
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ORIENTATION	HOURLY SOLAR RADIATION <sup>(M)</sup>												DAILY TOTAL RADIATION <sup>(N)</sup>	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20	SAT6S	SAT6D	SAT6S	SAT6D
SOUTH	0.	0.	7.	21.	57.	93.	121.	140.	146.	140.	121.	93.	57.	21.	7.	0.	0.	1024.	137.	185.	106.	133.
SOUTHWEST	0.	0.	7.	19.	31.	42.	50.	83.	120.	147.	161.	160.	142.	103.	38.	0.	0.	1103.	142.	193.	109.	138.
WEST	0.	0.	7.	19.	31.	42.	50.	55.	56.	100.	136.	158.	161.	136.	60.	0.	0.	1011.	176.	183.	106.	132.
NORTHWEST	0.	0.	7.	19.	31.	42.	50.	55.	56.	55.	60.	88.	105.	101.	50.	0.	0.	718.	118.	152.	96.	115.
NORTH	0.	0.	16.	19.	31.	42.	50.	55.	56.	55.	50.	42.	31.	19.	16.	0.	0.	480.	104.	126.	88.	100.
NORTHEAST	0.	0.	50.	101.	195.	88.	60.	55.	56.	55.	50.	42.	31.	19.	7.	0.	0.	718.	118.	152.	96.	115.
EAST	0.	0.	60.	136.	161.	158.	161.	158.	100.	56.	55.	50.	42.	31.	19.	7.	0.	1011.	136.	183.	106.	132.
SOUTHEAST	0.	0.	38.	103.	142.	160.	161.	147.	120.	83.	50.	42.	31.	19.	7.	0.	0.	1103.	142.	193.	109.	138.
HORIZ.	0.	0.	18.	66.	117.	161.	196.	218.	225.	218.	196.	161.	117.	66.	18.	0.	0.	1778.	183.	266.	132.	179.

	H0	TOD	TOT	KT	KD
MONTH 9	2547.	67.	64.	.547	.181

ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20	SATES	SATGD	SATES	SATGD
SOUTH	0.	0.	0.	27.	69.	109.	140.	159.	166.	159.	140.	109.	69.	27.	0.	0.	0.	1175.	147.	208.	104.	135.
SOUTHWEST	0.	0.	0.	11.	24.	34.	51.	94.	132.	159.	172.	168.	142.	86.	0.	0.	0.	1073.	140.	196.	101.	129.
WEST	0.	0.	0.	11.	24.	34.	43.	48.	49.	93.	128.	148.	146.	101.	0.	0.	0.	826.	123.	166.	92.	114.
NORTHWEST	0.	0.	0.	11.	24.	34.	43.	48.	49.	48.	43.	62.	78.	64.	0.	0.	0.	504.	101.	128.	81.	94.
NORTH	0.	0.	0.	11.	24.	34.	43.	48.	49.	48.	43.	34.	24.	11.	0.	0.	0.	369.	92.	112.	77.	86.
NORTHEAST	0.	0.	0.	64.	78.	62.	43.	48.	49.	48.	43.	34.	24.	11.	0.	0.	0.	504.	101.	128.	81.	94.
EAST	0.	0.	0.	101.	146.	148.	128.	93.	49.	48.	43.	34.	24.	11.	0.	0.	0.	826.	123.	166.	92.	114.
SOUTHEAST	0.	0.	0.	86.	142.	168.	172.	159.	132.	94.	51.	34.	24.	11.	0.	0.	0.	1073.	140.	196.	101.	129.
HORIZ.	0.	0.	1.	35.	84.	129.	164.	186.	194.	146.	164.	129.	84.	35.	1.	0.	0.	1392.	162.	234.	112.	148.

LOCATION	LEMONT, ILLINOIS	LATITUDE 41 DEGREES 40 MINUTES																				
MONTH 10	HO 1879.	TOD	58.	TOT	53.	KT	.506	KD	.187													
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY			
	-----																		SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	9.	65.	108.	140.	160.	166.	160.	140.	108.	65.	9.	0.	0.	0.	1129.	139.	205.		
SOUTHWEST	0.	0.	0.	3.	15.	25.	56.	96.	129.	152.	161.	152.	114.	19.	0.	0.	0.	924.	124.	178.		
WEST	0.	0.	0.	3.	15.	25.	33.	39.	40.	79.	108.	121.	106.	20.	0.	0.	0.	589.	100.	135.		
NORTHWEST	0.	0.	0.	3.	15.	25.	33.	39.	40.	39.	33.	34.	44.	12.	0.	0.	0.	318.	80.	99.		
NORTH	0.	0.	0.	3.	15.	25.	33.	39.	40.	39.	33.	25.	15.	3.	0.	0.	0.	271.	77.	93.		
NORTHEAST	0.	0.	0.	12.	44.	34.	33.	39.	40.	39.	33.	25.	15.	3.	0.	0.	0.	318.	80.	99.		
EAST	0.	0.	0.	20.	106.	121.	108.	79.	40.	39.	33.	25.	15.	3.	0.	0.	0.	589.	100.	135.		
SOUTHEAST	0.	0.	0.	19.	114.	152.	161.	152.	129.	96.	56.	25.	15.	3.	0.	0.	0.	924.	124.	178.		
HORIZ.	0.	0.	0.	7.	46.	87.	120.	141.	148.	141.	120.	87.	46.	7.	0.	0.	0.	950.	126.	182.		

MONTH	11	HO	1327.	TOD	43.	TOT	38.	KT	.433	KD	.185											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
																			SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	37.	86.	117.	136.	142.	136.	117.	86.	37.	0.	0.	0.	0.	893.	116.	175.	67.	90.
SOUTHWEST	0.	0.	0.	0.	7.	19.	51.	83.	109.	126.	129.	113.	58.	0.	0.	0.	0.	694.	99.	145.	61.	79.
WEST	0.	0.	0.	0.	7.	16.	24.	28.	30.	59.	79.	83.	50.	0.	0.	0.	0.	375.	73.	98.	50.	60.
NORTHWEST	0.	0.	0.	0.	7.	16.	24.	28.	30.	28.	24.	16.	16.	0.	0.	0.	0.	189.	58.	71.	44.	49.
NORTH	0.	0.	0.	0.	7.	16.	24.	28.	30.	28.	24.	16.	7.	0.	0.	0.	0.	180.	58.	70.	44.	49.
NORTHEAST	0.	0.	0.	0.	16.	16.	24.	28.	30.	28.	24.	16.	7.	0.	0.	0.	0.	189.	58.	71.	44.	49.
EAST	0.	0.	0.	0.	50.	83.	79.	59.	30.	28.	24.	16.	7.	0.	0.	0.	0.	375.	73.	98.	50.	60.
SOUTHEAST	0.	0.	0.	0.	58.	113.	129.	126.	109.	83.	51.	19.	7.	0.	0.	0.	0.	694.	99.	145.	61.	79.
HORIZ.	0.	0.	0.	0.	17.	50.	77.	94.	100.	94.	77.	50.	17.	0.	0.	0.	0.	575.	90.	128.	57.	72.

MONTH 12	HO 1121.	TOD	31.	TOT	27.	KT	.467	KD	.186											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD
SOUTH	0.	0.	0.	0.	24.	92.	130.	152.	160.	152.	130.	92.	24.	0.	0.	0.	0.	957.	113.	180.
SOUTHWEST	0.	0.	0.	0.	4.	20.	55.	91.	121.	139.	141.	118.	37.	0.	0.	0.	0.	727.	93.	144.
WEST	0.	0.	0.	0.	4.	14.	21.	26.	28.	60.	82.	83.	31.	0.	0.	0.	0.	348.	60.	85.
NORTHWEST	0.	0.	0.	0.	4.	14.	21.	26.	28.	26.	21.	14.	9.	0.	0.	0.	0.	162.	44.	56.
NORTH	0.	0.	0.	0.	4.	14.	21.	26.	28.	26.	21.	14.	4.	0.	0.	0.	0.	157.	44.	55.
NORTHEAST	0.	0.	0.	0.	9.	14.	21.	26.	28.	26.	21.	14.	4.	0.	0.	0.	0.	162.	44.	56.
EAST	0.	0.	0.	0.	31.	83.	82.	60.	28.	26.	21.	14.	4.	0.	0.	0.	0.	348.	60.	85.
SOUTHEAST	0.	0.	0.	0.	37.	118.	141.	139.	121.	91.	55.	20.	4.	0.	0.	0.	0.	727.	93.	144.
HORIZ.	0.	0.	0.	0.	9.	42.	72.	91.	97.	91.	72.	42.	9.	0.	0.	0.	0.	524.	76.	112.

LOCATION	LEMONT, ILLINOIS	LATITUDE 41 DEGREES 40 MINUTES		ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)											
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV				
SOUTH	109.	110.	111.	100.	107.	116.	124.	137.	147.	139.	116.				
SOUTHWEST	91.	96.	105.	104.	117.	127.	134.	142.	140.	124.	99.				
WEST	62.	73.	91.	100.	118.	132.	136.	136.	123.	100.	73.				
NORTHWEST	45.	54.	71.	87.	106.	121.	124.	118.	101.	80.	58.				
NORTH	44.	50.	63.	76.	93.	107.	109.	104.	92.	77.	58.				
NORTHEAST	45.	54.	71.	87.	106.	121.	124.	118.	101.	80.	58.				
EAST	62.	73.	91.	100.	118.	132.	136.	136.	123.	100.	73.				
SOUTHEAST	91.	96.	105.	104.	117.	127.	134.	142.	140.	124.	99.				
HORIZ.	79.	98.	124.	137.	166.	182.	186.	183.	162.	126.	90.				
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)															
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV				
SOUTH	174.	175.	169.	142.	144.	150.	162.	185.	208.	205.	175.				
SOUTHWEST	141.	150.	159.	149.	161.	170.	179.	191.	196.	178.	145.				
WEST	89.	108.	132.	141.	164.	178.	182.	183.	166.	135.	98.				
NORTHWEST	58.	73.	97.	118.	142.	159.	160.	152.	128.	99.	71.				
NORTH	56.	66.	82.	98.	118.	135.	135.	126.	112.	93.	70.				
NORTHEAST	58.	73.	97.	118.	142.	159.	160.	152.	128.	99.	71.				
EAST	89.	108.	132.	141.	164.	178.	182.	183.	166.	135.	98.				
SOUTHEAST	141.	150.	159.	149.	161.	170.	179.	193.	196.	178.	145.				
HORIZ.	120.	154.	194.	209.	248.	268.	270.	266.	234.	182.	128.				
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)															
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV				
SOUTH	56.	62.	72.	76.	88.	97.	103.	106.	104.	89.	67.				
SOUTHWEST	48.	56.	69.	78.	94.	104.	109.	109.	101.	82.	61.				
WEST	37.	45.	62.	76.	95.	107.	110.	106.	92.	72.	50.				
NORTHWEST	30.	37.	52.	69.	87.	100.	103.	96.	81.	63.	44.				
NORTH	30.	35.	48.	63.	79.	92.	94.	88.	77.	62.	44.				
NORTHEAST	30.	37.	52.	69.	87.	100.	103.	96.	81.	63.	44.				
EAST	37.	45.	62.	76.	95.	107.	110.	106.	92.	72.	50.				
SOUTHEAST	48.	56.	69.	78.	94.	104.	109.	109.	101.	82.	61.				
HORIZ.	44.	57.	79.	97.	124.	139.	141.	132.	112.	83.	57.				
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)															
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV				
SOUTH	81.	91.	101.	99.	110.	119.	126.	133.	135.	119.	90.				
SOUTHWEST	68.	80.	96.	103.	120.	131.	137.	138.	129.	107.	79.				
WEST	48.	61.	83.	99.	122.	136.	139.	132.	114.	87.	60.				
NORTHWEST	35.	45.	65.	86.	109.	124.	125.	115.	94.	71.	49.				
NORTH	35.	42.	58.	75.	95.	109.	110.	100.	86.	69.	49.				
NORTHEAST	35.	45.	65.	86.	109.	124.	125.	115.	94.	71.	49.				
EAST	48.	61.	83.	99.	122.	136.	139.	132.	114.	87.	60.				
SOUTHEAST	68.	80.	96.	103.	120.	131.	137.	138.	129.	107.	79.				
HORIZ.	60.	82.	114.	137.	174.	192.	192.	179.	148.	108.	72.				



LOCATION	LEXINGTON, KENTUCKY	LATITUDE	38 DEGREES	1 MINUTES																				
MONTH	1	HO 1537.	TOD	36.	TOT	32.	KT	.000	KD	.179														
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL						
	HOURLY SOLAR RADIATION																	RADIATION	SAG/DAYTIME				SAG/ALL DAY	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD	SATGS	SATGD	
SOUTH	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.	0.	164.	49.	60.	38.	42.	42.	
SOUTHWEST	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.	0.	164.	49.	60.	38.	42.	42.	
WEST	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.	0.	164.	49.	60.	38.	42.	42.	
NORTHWEST	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.	0.	164.	49.	60.	38.	42.	42.	
NORTH	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.	0.	164.	49.	60.	38.	42.	42.	
NORTHEAST	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.	0.	164.	49.	60.	38.	42.	42.	
EAST	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.	0.	164.	49.	60.	38.	42.	42.	
SOUTHEAST	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.	0.	164.	49.	60.	38.	42.	42.	
HORIZ.	0.	0.	0.	0.	13.	26.	35.	41.	43.	41.	35.	26.	13.	0.	0.	0.	0.	274.	58.	76.	41.	48.	48.	
MONTH	2	HO 2092.	TOD	39.	TOT	34.	KT	.000	KD	.179														
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL						
	HOURLY SOLAR RADIATION																	RADIATION	SAG/DAYTIME				SAG/ALL DAY	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD	SATGS	SATGD	
SOUTH	0.	0.	0.	4.	13.	21.	27.	31.	32.	31.	27.	21.	13.	4.	0.	0.	0.	225.	55.	68.	42.	48.	48.	
SOUTHWEST	0.	0.	0.	4.	13.	21.	27.	31.	32.	31.	27.	21.	13.	4.	0.	0.	0.	225.	55.	68.	42.	48.	48.	
WEST	0.	0.	0.	4.	13.	21.	27.	31.	32.	31.	27.	21.	13.	4.	0.	0.	0.	225.	55.	68.	42.	48.	48.	
NORTHWEST	0.	0.	0.	4.	13.	21.	27.	31.	32.	31.	27.	21.	13.	4.	0.	0.	0.	225.	55.	68.	42.	48.	48.	
NORTH	0.	0.	0.	4.	13.	21.	27.	31.	32.	31.	27.	21.	13.	4.	0.	0.	0.	225.	55.	68.	42.	48.	48.	
NORTHEAST	0.	0.	0.	4.	13.	21.	27.	31.	32.	31.	27.	21.	13.	4.	0.	0.	0.	225.	55.	68.	42.	48.	48.	
EAST	0.	0.	0.	4.	13.	21.	27.	31.	32.	31.	27.	21.	13.	4.	0.	0.	0.	225.	55.	68.	42.	48.	48.	
SOUTHEAST	0.	0.	0.	4.	13.	21.	27.	31.	32.	31.	27.	21.	13.	4.	0.	0.	0.	225.	55.	68.	42.	48.	48.	
HORIZ.	0.	0.	0.	7.	22.	35.	45.	51.	54.	51.	45.	35.	22.	7.	0.	0.	0.	376.	65.	87.	47.	56.	56.	
MONTH	3	HO 2694.	TOD	47.	TOT	42.	KT	.000	KD	.179														
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL						
	HOURLY SOLAR RADIATION																	RADIATION	SAG/DAYTIME				SAG/ALL DAY	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD	SATGS	SATGD	
SOUTH	0.	0.	0.	10.	19.	27.	33.	37.	38.	37.	33.	27.	19.	10.	0.	0.	0.	288.	66.	81.	52.	59.	59.	
SOUTHWEST	0.	0.	0.	10.	19.	27.	33.	37.	38.	37.	33.	27.	19.	10.	0.	0.	0.	288.	66.	81.	52.	59.	59.	
WEST	0.	0.	0.	10.	19.	27.	33.	37.	38.	37.	33.	27.	19.	10.	0.	0.	0.	288.	66.	81.	52.	59.	59.	
NORTHWEST	0.	0.	0.	10.	19.	27.	33.	37.	38.	37.	33.	27.	19.	10.	0.	0.	0.	288.	66.	81.	52.	59.	59.	
NORTH	0.	0.	0.	10.	19.	27.	33.	37.	38.	37.	33.	27.	19.	10.	0.	0.	0.	288.	66.	81.	52.	59.	59.	
NORTHEAST	0.	0.	0.	10.	19.	27.	33.	37.	38.	37.	33.	27.	19.	10.	0.	0.	0.	288.	66.	81.	52.	59.	59.	
EAST	0.	0.	0.	10.	19.	27.	33.	37.	38.	37.	33.	27.	19.	10.	0.	0.	0.	288.	66.	81.	52.	59.	59.	
SOUTHEAST	0.	0.	0.	10.	19.	27.	33.	37.	38.	37.	33.	27.	19.	10.	0.	0.	0.	288.	66.	81.	52.	59.	59.	
SORIZ.	0.	0.	0.	17.	32.	45.	55.	61.	63.	61.	55.	45.	32.	17.	0.	0.	0.	480.	78.	103.	58.	70.	70.	

LOCATION LEXINGTON, KENTUCKY LATITUDE 38 DEGREES 1 MINUTES

MONTH	4	HO	3273.	TOD	58.	TOT	53.	KT	.575	KD	.174						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	7.	20.	55.	90.	118.	136.	142.	136.	118.	90.	55.	20.	7.	0.	0.
SOUTHWEST	0.	0.	7.	20.	32.	43.	52.	79.	118.	147.	163.	163.	146.	108.	39.	0.	0.
WEST	0.	0.	7.	20.	32.	43.	52.	57.	59.	105.	142.	166.	171.	146.	62.	0.	0.
NORTHWEST	0.	0.	7.	20.	32.	43.	52.	57.	59.	57.	69.	97.	114.	110.	52.	0.	0.
NORTH	0.	0.	16.	20.	32.	43.	52.	57.	59.	57.	52.	43.	32.	20.	16.	0.	0.
NORTHEAST	0.	0.	52.	110.	114.	97.	69.	57.	59.	57.	52.	43.	32.	20.	7.	0.	0.
EAST	0.	0.	62.	146.	171.	166.	142.	105.	59.	57.	52.	43.	32.	20.	7.	0.	0.
SOUTHEAST	0.	0.	39.	108.	146.	163.	163.	147.	118.	79.	52.	43.	32.	20.	7.	0.	0.
HORIZ.	0.	0.	17.	69.	123.	171.	209.	232.	240.	232.	209.	171.	123.	69.	17.	0.	0.

MONTH	5	HO	3629.	TOD	67.	TOT	63.	KT	.606	KD	.173						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	1.	12.	24.	39.	73.	101.	118.	124.	118.	101.	73.	39.	24.	12.	1.	0.
SOUTHWEST	0.	1.	12.	24.	36.	47.	55.	66.	106.	136.	154.	156.	142.	110.	59.	1.	0.
WEST	0.	1.	12.	24.	36.	47.	55.	60.	62.	110.	149.	175.	182.	165.	106.	1.	0.
NORTHWEST	0.	1.	12.	24.	36.	47.	55.	60.	62.	60.	89.	119.	137.	137.	97.	1.	0.
NORTH	0.	1.	39.	43.	36.	47.	55.	60.	62.	60.	55.	47.	36.	43.	39.	1.	0.
NORTHEAST	0.	1.	97.	137.	137.	119.	89.	60.	62.	60.	55.	47.	36.	24.	12.	1.	0.
EAST	0.	1.	106.	165.	182.	175.	149.	110.	62.	60.	55.	47.	36.	24.	12.	1.	0.
SOUTHEAST	0.	1.	59.	110.	142.	156.	154.	136.	106.	66.	55.	47.	36.	24.	12.	1.	0.
HORIZ.	0.	2.	37.	93.	148.	196.	234.	257.	265.	234.	196.	148.	93.	37.	2.	0.	0.

MONTH	6	HO	3755.	TOD	76.	TOT	72.	KT	.000	KD	.179						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	3.	11.	20.	28.	35.	40.	43.	44.	43.	40.	35.	28.	20.	11.	3.	0.
SOUTHWEST	0.	3.	11.	20.	28.	35.	40.	43.	44.	43.	40.	35.	28.	20.	11.	3.	0.
WEST	0.	3.	11.	20.	28.	35.	40.	43.	44.	43.	40.	35.	28.	20.	11.	3.	0.
NORTHWEST	0.	3.	11.	20.	28.	35.	40.	43.	44.	43.	40.	35.	28.	20.	11.	3.	0.
NORTH	0.	3.	11.	20.	28.	35.	40.	43.	44.	43.	40.	35.	28.	20.	11.	3.	0.
NORTHEAST	0.	3.	11.	20.	28.	35.	40.	43.	44.	43.	40.	35.	28.	20.	11.	3.	0.
EAST	0.	3.	11.	20.	28.	35.	40.	43.	44.	43.	40.	35.	28.	20.	11.	3.	0.
SOUTHEAST	0.	3.	11.	20.	28.	35.	40.	43.	44.	43.	40.	35.	28.	20.	11.	3.	0.
HORIZ.	0.	4.	19.	33.	46.	58.	67.	72.	74.	72.	67.	58.	46.	33.	19.	4.	0.

LOCATION	LEXINGTON, KENTUCKY				LATITUDE				38 DEGREES				1 MINUTES																			
MONTH	7	HO	3625.	TOD	80.	TOT	76.	KT	.610	KD	.172																					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SATGS				SAG/ALL DAY SATGS						
SOUTH	0.	1.	12.	24.	39.	73.	100.	118.	124.	118.	100.	73.	39.	24.	12.	1.	0.	858.	129.	167.	105.	128.	129.	167.	105.	128.						
SOUTHWEST	0.	1.	12.	24.	36.	47.	55.	66.	106.	137.	154.	156.	142.	109.	58.	1.	0.	1103.	143.	192.	113.	142.	143.	192.	113.	142.						
WEST	0.	1.	12.	24.	36.	47.	55.	60.	62.	110.	150.	176.	183.	164.	104.	1.	0.	1184.	148.	200.	116.	147.	148.	200.	116.	147.						
NORTHWEST	0.	1.	12.	24.	36.	47.	55.	60.	62.	60.	90.	120.	138.	137.	96.	1.	0.	938.	134.	175.	108.	132.	134.	175.	108.	132.						
NORTH	0.	1.	39.	44.	36.	47.	55.	60.	62.	60.	55.	47.	36.	44.	39.	1.	0.	625.	116.	143.	97.	113.	116.	143.	97.	113.						
NORTHEAST	0.	1.	96.	137.	138.	120.	90.	60.	62.	60.	55.	47.	36.	24.	12.	1.	0.	938.	134.	175.	108.	132.	134.	175.	108.	132.						
EAST	0.	1.	104.	164.	183.	176.	150.	110.	62.	60.	55.	47.	36.	24.	12.	1.	0.	1184.	148.	200.	116.	147.	148.	200.	116.	147.						
SOUTHEAST	0.	1.	58.	109.	142.	156.	154.	137.	106.	66.	55.	47.	36.	24.	12.	1.	0.	1103.	143.	192.	113.	142.	143.	192.	113.	142.						
HORIZ.	0.	2.	37.	93.	148.	197.	235.	259.	268.	259.	235.	197.	148.	93.	37.	2.	0.	2211.	207.	305.	151.	209.	207.	305.	151.	209.						
MONTH	8	HO	3249.	TOD	78.	TOT	74.	KT	.619	KD	.169																					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SATGS				SAG/ALL DAY SATGS						
SOUTH	0.	0.	6.	19.	57.	95.	126.	146.	153.	146.	126.	95.	57.	19.	6.	0.	0.	1051.	143.	193.	110.	138.	143.	193.	110.	138.						
SOUTHWEST	0.	0.	6.	19.	32.	43.	52.	82.	125.	158.	176.	177.	158.	115.	39.	0.	0.	1183.	151.	207.	115.	146.	151.	207.	115.	146.						
WEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	111.	153.	181.	186.	157.	61.	0.	0.	1116.	147.	200.	113.	142.	147.	200.	113.	142.						
NORTHWEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	57.	71.	104.	123.	117.	52.	0.	0.	791.	127.	165.	101.	122.	127.	165.	101.	122.						
NORTH	0.	0.	16.	20.	32.	43.	52.	57.	59.	57.	52.	43.	32.	20.	16.	0.	0.	498.	109.	133.	91.	104.	109.	133.	91.	104.						
NORTHEAST	0.	0.	52.	117.	123.	104.	71.	57.	59.	57.	52.	43.	32.	19.	6.	0.	0.	791.	127.	165.	101.	122.	127.	165.	101.	122.						
EAST	0.	0.	61.	157.	166.	181.	153.	111.	59.	57.	52.	43.	32.	19.	6.	0.	0.	1116.	147.	200.	113.	142.	147.	200.	113.	142.						
SOUTHEAST	0.	0.	39.	115.	158.	177.	176.	158.	125.	82.	52.	43.	32.	19.	6.	0.	0.	1183.	151.	207.	115.	146.	151.	207.	115.	146.						
HORIZ.	0.	0.	17.	72.	131.	183.	224.	250.	259.	250.	224.	183.	131.	72.	17.	0.	0.	2012.	203.	298.	143.	196.	203.	298.	143.	196.						
MONTH	9	HO	2681.	TOD	73.	TOT	69.	KT	.631	KD	.166																					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SATGS				SAG/ALL DAY SATGS						
SOUTH	0.	0.	0.	30.	79.	124.	159.	182.	189.	182.	159.	124.	79.	30.	0.	0.	0.	1337.	164.	234.	115.	150.	164.	234.	115.	150.						
SOUTHWEST	0.	0.	0.	12.	25.	36.	49.	102.	149.	184.	203.	201.	174.	107.	0.	0.	0.	1243.	157.	222.	111.	144.	157.	222.	111.	144.						
WEST	0.	0.	0.	12.	25.	36.	45.	51.	53.	108.	154.	181.	181.	129.	0.	0.	0.	976.	139.	190.	102.	128.	139.	190.	102.	128.						
NORTHWEST	0.	0.	0.	12.	25.	36.	45.	51.	53.	51.	45.	36.	25.	12.	0.	0.	0.	574.	112.	142.	89.	104.	112.	142.	89.	104.						
NORTH	0.	0.	0.	12.	25.	36.	45.	51.	53.	51.	45.	36.	25.	12.	0.	0.	0.	391.	99.	120.	82.	93.	99.	120.	82.	93.						
NORTHEAST	0.	0.	0.	82.	97.	77.	45.	51.	53.	51.	45.	36.	25.	12.	0.	0.	0.	574.	112.	142.	89.	104.	112.	142.	89.	104.						
EAST	0.	0.	0.	129.	181.	181.	154.	108.	53.	51.	45.	36.	25.	12.	0.	0.	0.	976.	139.	190.	102.	128.	139.	190.	102.	128.						
SOUTHEAST	0.	0.	0.	107.	174.	201.	203.	184.	149.	102.	49.	36.	25.	12.	0.	0.	0.	1243.	157.	222.	111.	144.	157.	222.	111.	144.						
HORIZ.	0.	0.	0.	41.	102.	157.	200.	227.	237.	227.	200.	157.	102.	41.	0.	0.	0.	1691.	188.	276.	127.	171.	188.	276.	127.	171.						

LOCATION	LEXINGTON, KENTUCKY				LATITUDE				38 DEGREES				1 MINUTES															
MONTH 10	HO	2058.	TOD	61.	TOT	57.	KT	.604	KD	.173																		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY									
	HOURLY SOLAR RADIATION																		SATGS	SATGD	SATGS	SATGD						
	SOUTH	0.	0.	0.	17.	85.	136.	174.	197.	205.	197.	174.	136.	85.	17.	0.	0.		1424.	162.	245.	103.	140.					
	SOUTHWEST	0.	0.	0.	4.	17.	28.	63.	114.	158.	190.	205.	197.	156.	41.	0.	0.		1173.	144.	212.	95.	126.					
	WEST	0.	0.	0.	4.	17.	28.	37.	43.	45.	96.	137.	159.	145.	44.	0.	0.		755.	115.	158.	82.	101.					
	NORTHWEST	0.	0.	0.	4.	17.	28.	37.	43.	45.	43.	37.	44.	60.	23.	0.	0.		380.	88.	110.	70.	79.					
	NORTH	0.	0.	0.	4.	17.	28.	37.	43.	45.	43.	37.	28.	17.	4.	0.	0.		303.	83.	100.	67.	75.					
	NORTHEAST	0.	0.	0.	23.	60.	44.	37.	43.	45.	43.	37.	28.	17.	4.	0.	0.		380.	88.	110.	70.	79.					
	EAST	0.	0.	0.	44.	145.	159.	137.	96.	45.	43.	37.	28.	17.	4.	0.	0.		755.	115.	158.	82.	101.					
	SOUTHEAST	0.	0.	0.	41.	156.	197.	205.	190.	158.	114.	63.	28.	17.	4.	0.	0.		1173.	144.	212.	95.	126.					
HORIZ.	0.	0.	0.	10.	62.	115.	156.	183.	192.	183.	156.	115.	62.	10.	0.	0.	1243.	149.	221.	97.	130.							
MONTH 11	HO	1525.	TOD	48.	TOT	44.	KT	.000	KD	.179																		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY									
	HOURLY SOLAR RADIATION																		SATGS	SATGD	SATGS	SATGD						
	SOUTH	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.		163.	60.	71.	49.	53.					
	SOUTHWEST	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.		163.	60.	71.	49.	53.					
	WEST	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.		163.	60.	71.	49.	53.					
	NORTHWEST	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.		163.	60.	71.	49.	53.					
	NORTH	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.		163.	60.	71.	49.	53.					
	NORTHEAST	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.		163.	60.	71.	49.	53.					
	EAST	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.		163.	60.	71.	49.	53.					
	SOUTHEAST	0.	0.	0.	0.	8.	15.	21.	25.	26.	25.	21.	15.	8.	0.	0.	0.		163.	60.	71.	49.	53.					
HORIZ.	0.	0.	0.	0.	13.	25.	35.	41.	43.	41.	35.	25.	13.	0.	0.	0.	272.	69.	86.	53.	60.							
MONTH 12	HO	1324.	TOD	38.	TOT	35.	KT	.513	KD	.186																		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY									
	HOURLY SOLAR RADIATION																		SATGS	SATGD	SATGS	SATGD						
	SOUTH	0.	0.	0.	0.	46.	111.	150.	172.	180.	172.	150.	111.	46.	0.	0.	0.		1139.	132.	209.	71.	101.					
	SOUTHWEST	0.	0.	0.	0.	7.	23.	63.	103.	136.	158.	164.	144.	72.	0.	0.	0.		871.	110.	169.	63.	86.					
	WEST	0.	0.	0.	0.	7.	17.	25.	31.	32.	70.	97.	103.	59.	0.	0.	0.		440.	75.	104.	49.	61.					
	NORTHWEST	0.	0.	0.	0.	7.	17.	25.	31.	32.	31.	25.	17.	16.	0.	0.	0.		201.	55.	69.	41.	47.					
	NORTH	0.	0.	0.	0.	7.	17.	25.	31.	32.	31.	25.	17.	7.	0.	0.	0.		192.	54.	67.	41.	46.					
	NORTHEAST	0.	0.	0.	0.	16.	17.	25.	31.	32.	31.	25.	17.	7.	0.	0.	0.		201.	55.	69.	41.	47.					
	EAST	0.	0.	0.	0.	59.	103.	97.	70.	32.	31.	25.	17.	7.	0.	0.	0.		440.	75.	104.	49.	61.					
	SOUTHEAST	0.	0.	0.	0.	72.	144.	164.	158.	136.	103.	63.	23.	7.	0.	0.	0.		871.	110.	169.	63.	86.					
HORIZ.	0.	0.	0.	0.	18.	58.	91.	113.	121.	113.	91.	58.	18.	0.	0.	0.	680.	94.	140.	57.	75.							



## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	49.	55.	66.	115.	117.	99.	129.	143.	164.	162.	60.	132.	108.
SOUTHWEST	49.	55.	66.	123.	131.	99.	143.	151.	157.	144.	60.	110.	107.
WEST	49.	55.	66.	119.	136.	99.	148.	147.	139.	115.	60.	75.	101.
NORTHWEST	49.	55.	66.	102.	122.	99.	134.	127.	112.	88.	60.	55.	89.
NORTH	49.	55.	66.	87.	104.	99.	116.	109.	99.	83.	60.	54.	82.
NORTHEAST	49.	55.	66.	102.	122.	99.	134.	127.	112.	88.	60.	55.	89.
EAST	49.	55.	66.	119.	136.	99.	148.	147.	139.	115.	60.	75.	101.
SOUTHEAST	49.	55.	66.	123.	131.	99.	143.	151.	157.	144.	60.	110.	107.
HORIZ.	58.	65.	78.	167.	194.	114.	207.	203.	188.	149.	69.	94.	132.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	60.	68.	81.	162.	155.	116.	167.	193.	234.	245.	71.	209.	147.
SOUTHWEST	60.	68.	81.	175.	180.	116.	192.	207.	222.	212.	71.	169.	146.
WEST	60.	68.	81.	170.	189.	116.	200.	200.	190.	158.	71.	104.	134.
NORTHWEST	60.	68.	81.	139.	163.	116.	175.	165.	142.	110.	71.	69.	113.
NORTH	60.	68.	81.	110.	131.	116.	143.	133.	120.	100.	71.	67.	100.
NORTHEAST	60.	68.	81.	139.	163.	116.	175.	165.	142.	110.	71.	69.	113.
EAST	60.	68.	81.	170.	188.	116.	200.	200.	190.	158.	71.	104.	134.
SOUTHEAST	60.	68.	81.	175.	180.	116.	192.	207.	222.	212.	71.	169.	146.
HORIZ.	76.	87.	103.	256.	292.	143.	305.	298.	276.	221.	86.	140.	190.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	38.	42.	52.	85.	92.	86.	105.	110.	115.	103.	49.	71.	79.
SOUTHWEST	38.	42.	52.	89.	100.	86.	113.	115.	111.	95.	49.	63.	79.
WEST	38.	42.	52.	87.	103.	86.	116.	113.	102.	82.	49.	49.	76.
NORTHWEST	38.	42.	52.	78.	95.	86.	108.	101.	89.	70.	49.	41.	71.
NORTH	38.	42.	52.	69.	84.	86.	97.	91.	82.	67.	49.	41.	66.
NORTHEAST	38.	42.	52.	78.	95.	86.	108.	101.	89.	70.	49.	41.	71.
EAST	38.	42.	52.	87.	103.	86.	116.	113.	102.	82.	49.	49.	76.
SOUTHEAST	38.	42.	52.	89.	100.	86.	113.	115.	111.	95.	49.	63.	79.
HORIZ.	41.	47.	58.	113.	138.	95.	151.	143.	127.	97.	53.	57.	93.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	42.	48.	59.	111.	115.	97.	128.	138.	150.	140.	53.	101.	98.
SOUTHWEST	42.	48.	59.	118.	129.	97.	142.	146.	144.	126.	53.	86.	99.
WEST	42.	48.	59.	115.	134.	97.	147.	142.	128.	101.	53.	61.	94.
NORTHWEST	42.	48.	59.	98.	119.	97.	132.	122.	104.	79.	53.	47.	83.
NORTH	42.	48.	59.	82.	100.	97.	113.	104.	93.	75.	53.	46.	76.
NORTHEAST	42.	48.	59.	98.	119.	97.	132.	122.	104.	79.	53.	47.	83.
EAST	42.	48.	59.	115.	134.	97.	147.	142.	128.	101.	53.	61.	94.
SOUTHEAST	42.	48.	59.	118.	129.	97.	142.	146.	144.	126.	53.	86.	99.
HORIZ.	48.	56.	70.	163.	195.	113.	209.	196.	171.	130.	60.	75.	124.

LOCATION LINCOLN, NEBRASKA LATITUDE 40 DEGREES 51 MINUTES

MONTH	1	HO	1383.	TON	23.	TOT	24.	KT	542	KD	182	HOURLY SOLAR RADIATION		DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	0.	0.	56.	121.	162.	185.	173.	145.	162.	121.	56.	0.	0.	0.	0.	1240.	128.	209.	64.	96.
SOUTHWEST	0.	0.	0.	0.	8.	21.	65.	109.	147.	172.	179.	160.	90.	0.	0.	0.	0.	951.	104.	167.	54.	79.
WEST	0.	0.	0.	0.	8.	18.	26.	32.	33.	76.	107.	117.	77.	0.	0.	0.	0.	493.	67.	100.	40.	53.
NORTHWEST	0.	0.	0.	0.	8.	18.	26.	32.	33.	32.	26.	18.	23.	0.	0.	0.	0.	216.	45.	59.	31.	37.
NORTH	0.	0.	0.	0.	8.	18.	26.	32.	33.	32.	26.	18.	8.	0.	0.	0.	0.	201.	44.	57.	30.	36.
NORTHEAST	0.	0.	0.	0.	23.	18.	26.	32.	33.	32.	26.	18.	8.	0.	0.	0.	0.	216.	45.	59.	31.	37.
EAST	0.	0.	0.	0.	77.	117.	107.	76.	33.	32.	26.	18.	8.	0.	0.	0.	0.	493.	67.	100.	40.	53.
SOUTHEAST	0.	0.	0.	0.	90.	160.	179.	172.	147.	109.	65.	21.	8.	0.	0.	0.	0.	951.	104.	167.	54.	79.
HORIZ.	0.	0.	0.	0.	22.	65.	100.	123.	130.	123.	100.	65.	22.	0.	0.	0.	0.	751.	137.	174.	48.	68.

MONTH	2	HO	1954.	TON	32.	TOT	28.	KT	528	KD	184	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	13.	72.	116.	148.	168.	175.	168.	148.	116.	72.	13.	0.	0.	0.
SOUTHWEST	0.	0.	0.	4.	16.	26.	58.	100.	136.	161.	172.	164.	129.	31.	0.	0.	0.
WEST	0.	0.	0.	4.	16.	26.	35.	40.	42.	83.	115.	131.	119.	33.	0.	0.	0.
NORTHWEST	0.	0.	0.	4.	16.	26.	35.	40.	42.	40.	35.	37.	49.	18.	0.	0.	0.
NORTH	0.	0.	0.	4.	16.	26.	35.	40.	42.	40.	35.	26.	16.	4.	0.	0.	0.
NORTHEAST	0.	0.	0.	18.	49.	37.	35.	40.	42.	40.	35.	26.	16.	4.	0.	0.	0.
EAST	0.	0.	0.	33.	119.	131.	115.	83.	42.	40.	35.	26.	16.	4.	0.	0.	0.
SOUTHEAST	0.	0.	0.	31.	129.	164.	172.	161.	136.	100.	58.	26.	16.	4.	0.	0.	0.
HORIZ.	0.	0.	0.	8.	52.	95.	130.	151.	159.	151.	130.	95.	52.	8.	0.	0.	0.

MONTH	3	HO	2590.	TON	42.	TOT	38.	KT	.532	KD	.184	SAG/DAYTIME		SAG/ALL DAY							
ORIENTATION	4	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SATGS	SAT6S	SAT6S	SAT6S					
		5	6	7	8	9	10	11	12	13	14						15	16	17	18	19
SOUTH	0.	0.	0.	27.	69.	106.	135.	154.	160.	154.	135.	106.	69.	27.	0.	0.	0.	115.	175.	75.	105.
SOUTHWEST	0.	0.	0.	12.	24.	35.	50.	92.	128.	154.	166.	163.	140.	88.	0.	0.	0.	110.	165.	72.	100.
WEST	0.	0.	0.	12.	24.	35.	43.	48.	50.	92.	125.	145.	144.	104.	0.	0.	0.	95.	138.	65.	100.
NORTHWEST	0.	0.	0.	12.	24.	35.	43.	48.	50.	48.	43.	62.	77.	66.	0.	0.	0.	75.	101.	55.	68.
NORTH	0.	0.	0.	12.	24.	35.	43.	48.	50.	48.	43.	35.	24.	12.	0.	0.	0.	66.	86.	50.	60.
NORTHEAST	0.	0.	0.	66.	77.	62.	43.	48.	50.	48.	43.	35.	24.	12.	0.	0.	0.	75.	101.	55.	68.
EAST	0.	0.	0.	104.	144.	145.	125.	92.	50.	48.	43.	35.	24.	12.	0.	0.	0.	95.	138.	65.	86.
SOUTHEAST	0.	0.	0.	88.	140.	163.	166.	154.	128.	92.	50.	35.	24.	12.	0.	0.	0.	110.	165.	72.	100.
HORIZ.	0.	0.	0.	35.	84.	128.	162.	183.	191.	183.	162.	128.	84.	35.	0.	0.	0.	130.	202.	83.	119.

LOCATION LINCOLN, NEBRASKA LATITUDE 40 DEGREES 51 MINUTES

MONTH	4	HO	3218.	TOD	56.	TOT	52.	HOURLY SOLAR RADIATION								KT	.507	KD	.187				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
SOUTH	0.	0.	7.	21.	53.	84.	109.	125.	130.	125.	109.	84.	53.	21.	7.	0.	0.	928.	109.	153.	82.	106.	
SOUTHWEST	0.	0.	7.	20.	31.	42.	50.	77.	109.	132.	143.	142.	126.	93.	36.	0.	0.	1006.	114.	161.	84.	110.	
WEST	0.	0.	7.	20.	31.	42.	50.	55.	56.	56.	59.	82.	141.	143.	122.	56.	0.	938.	110.	154.	82.	106.	
NORTHWEST	0.	0.	7.	20.	31.	42.	50.	55.	56.	55.	59.	82.	95.	91.	47.	0.	0.	689.	95.	128.	74.	92.	
NORTH	0.	0.	15.	20.	31.	42.	50.	55.	56.	55.	50.	42.	31.	20.	15.	0.	0.	480.	83.	106.	67.	80.	
NORTHEAST	0.	0.	47.	91.	95.	82.	59.	55.	56.	55.	50.	42.	31.	20.	7.	0.	0.	689.	95.	128.	74.	92.	
EAST	0.	0.	56.	122.	143.	141.	123.	93.	56.	55.	50.	42.	31.	20.	7.	0.	0.	938.	110.	154.	82.	106.	
SOUTHEAST	0.	0.	36.	93.	126.	142.	143.	132.	109.	77.	50.	42.	31.	20.	7.	0.	0.	1006.	114.	161.	84.	110.	
HORIZ.	0.	0.	18.	62.	108.	148.	179.	199.	205.	199.	179.	148.	108.	62.	18.	0.	0.	1633.	150.	226.	104.	147.	

MONTH	5	HO	3618.	TOD	66.	TOT	62.	HOURLY SOLAR RADIATION				KT	.522	KD	.185				DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20							
SOUTH	0.	2.	13.	25.	42.	72.	95.	110.	116.	110.	95.	72.	42.	25.	13.	2.	0.		833.	113.	149.	90.	112.	
SOUTHWEST	0.	2.	13.	25.	36.	46.	53.	68.	99.	122.	135.	134.	121.	94.	52.	3.	0.		1002.	123.	166.	96.	122.	
WEST	0.	2.	13.	25.	36.	46.	53.	58.	60.	96.	126.	145.	150.	135.	90.	4.	0.		1039.	125.	170.	97.	124.	
NORTHWEST	0.	2.	13.	25.	36.	46.	53.	58.	60.	58.	75.	98.	112.	112.	83.	4.	0.		833.	113.	149.	90.	112.	
NORTH	0.	3.	34.	37.	36.	46.	53.	58.	60.	58.	53.	46.	36.	37.	34.	3.	0.		593.	99.	125.	82.	98.	
NORTHEAST	0.	4.	83.	112.	112.	98.	75.	58.	60.	58.	53.	46.	36.	25.	13.	2.	0.		833.	113.	149.	90.	112.	
EAST	0.	4.	90.	135.	150.	145.	126.	96.	60.	58.	53.	46.	36.	25.	13.	2.	0.		1039.	125.	170.	97.	124.	
SOUTHEAST	0.	3.	52.	94.	121.	134.	135.	122.	99.	68.	53.	46.	36.	25.	13.	2.	0.		1002.	123.	166.	96.	122.	
HORIZ.	0.	3.	37.	83.	128.	167.	198.	217.	224.	217.	198.	167.	128.	83.	37.	3.	0.		1889.	173.	255.	126.	176.	

MONTH	6	HO	3763.	TOD	76.	TOT	72.	KT	.542	KD	.182	HOURLY SOLAR RADIATION		DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD	
SOUTH	0.	4.	15.	26.	37.	67.	91.	106.	112.	106.	91.	67.	37.	26.	15.	4.	0.	804.	120.	154.	100.	121.
SOUTHWEST	0.	4.	15.	26.	37.	47.	55.	64.	97.	121.	134.	135.	122.	95.	56.	9.	0.	1017.	132.	175.	107.	134.
WEST	0.	4.	15.	26.	37.	47.	55.	59.	61.	99.	131.	151.	157.	143.	102.	19.	0.	1106.	137.	183.	110.	139.
NORTHWEST	0.	4.	15.	26.	37.	47.	55.	59.	61.	59.	83.	107.	122.	123.	97.	20.	0.	914.	126.	165.	103.	127.
NORTH	0.	11.	43.	46.	38.	47.	55.	59.	61.	59.	55.	47.	38.	46.	43.	11.	0.	659.	112.	140.	95.	112.
NORTHEAST	0.	20.	97.	123.	122.	107.	83.	59.	61.	59.	55.	47.	37.	26.	15.	4.	0.	914.	126.	165.	103.	127.
EAST	0.	19.	102.	143.	157.	151.	131.	99.	61.	59.	55.	47.	37.	26.	15.	4.	0.	1106.	137.	183.	110.	139.
SOUTHEAST	0.	9.	56.	95.	122.	135.	134.	121.	97.	64.	55.	47.	37.	26.	15.	4.	0.	1017.	132.	175.	107.	134.
HORIZ.	0.	8.	45.	92.	138.	179.	210.	230.	236.	230.	210.	179.	138.	92.	45.	8.	0.	2040.	188.	274.	142.	195.

LOCATION	LINCOLN, NEBRASKA										LATITUDE 40 DEGPES 51 MINUTES														
MONTH	7	HO	3616.	TOD	93.	TOT	78.	KT	.547	KD	.181														
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SATGS SATGD SAT6S SATGN			
SOUTH	0.	2.	13.	25.	42.	73.	99.	115.	120.	115.	99.	73.	42.	25.	13.	2.	0.	857.	131.	168.	108.	130.			
SOUTHWEST	0.	2.	13.	25.	36.	46.	53.	69.	103.	128.	141.	141.	127.	98.	54.	3.	0.	1039.	141.	186.	114.	141.			
WEST	0.	2.	13.	25.	36.	46.	53.	58.	60.	100.	133.	154.	159.	143.	94.	4.	0.	1079.	144.	190.	115.	144.			
NORTHWEST	0.	2.	13.	25.	36.	46.	53.	58.	60.	58.	78.	103.	118.	118.	87.	4.	0.	858.	131.	168.	108.	130.			
NORTH	0.	3.	36.	38.	36.	46.	53.	58.	60.	58.	53.	46.	36.	38.	36.	3.	0.	601.	117.	143.	99.	115.			
NORTHEAST	0.	4.	87.	118.	118.	103.	78.	58.	60.	58.	53.	46.	36.	25.	13.	2.	0.	858.	131.	168.	108.	130.			
EAST	0.	4.	94.	143.	159.	154.	133.	100.	60.	58.	53.	46.	36.	25.	13.	2.	0.	1079.	144.	190.	115.	144.			
SOUTHEAST	0.	3.	54.	98.	127.	141.	141.	128.	103.	69.	53.	46.	36.	25.	13.	2.	0.	1039.	141.	186.	114.	141.			
HORIZ.	0.	4.	38.	86.	133.	175.	208.	228.	235.	228.	208.	175.	133.	86.	38.	4.	0.	1978.	195.	280.	146.	198.			
MONTH	8	HO	3195.	TOD	80.	TOT	76.	KT	.577	KD	.177														
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SATGS SATGD SAT6S SATGN			
SOUTH	0.	0.	7.	20.	58.	94.	124.	143.	149.	143.	124.	94.	58.	20.	7.	0.	0.	1041.	144.	193.	112.	139.			
SOUTHWEST	0.	0.	7.	19.	31.	42.	50.	55.	57.	103.	141.	166.	166.	147.	107.	39.	0.	1131.	149.	202.	115.	145.			
WEST	0.	0.	7.	19.	31.	42.	50.	55.	57.	103.	141.	165.	168.	142.	61.	0.	0.	1043.	144.	193.	112.	139.			
NORTHWEST	0.	0.	7.	19.	31.	42.	50.	55.	57.	55.	62.	92.	110.	106.	51.	0.	0.	739.	125.	160.	101.	121.			
NORTH	0.	0.	16.	19.	31.	42.	50.	55.	57.	55.	50.	42.	31.	19.	16.	0.	0.	485.	110.	133.	93.	106.			
NORTHEAST	0.	0.	51.	106.	110.	92.	62.	55.	57.	55.	50.	42.	31.	19.	7.	0.	0.	739.	125.	160.	101.	121.			
EAST	0.	0.	61.	142.	168.	165.	141.	103.	57.	55.	50.	42.	31.	19.	7.	0.	0.	1043.	144.	193.	112.	139.			
SOUTHEAST	0.	0.	39.	107.	147.	166.	166.	151.	122.	83.	50.	42.	31.	19.	7.	0.	0.	1131.	149.	202.	115.	145.			
HORIZ.	0.	0.	18.	68.	121.	168.	204.	227.	235.	227.	204.	168.	121.	68.	18.	0.	0.	1845.	193.	280.	139.	188.			
MONTH	9	HO	2578.	TOD	71.	TOT	67.	KT	.568	KD	.178														
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SATGS SATGD SAT6S SATGN			
SOUTH	0.	0.	0.	28.	72.	113.	145.	165.	172.	165.	145.	113.	72.	28.	0.	0.	0.	1219.	154.	218.	109.	141.			
SOUTHWEST	0.	0.	0.	12.	24.	35.	51.	97.	137.	166.	180.	176.	150.	91.	0.	0.	0.	1118.	147.	206.	105.	135.			
WEST	0.	0.	0.	12.	24.	35.	43.	49.	50.	97.	134.	156.	154.	108.	0.	0.	0.	863.	130.	175.	97.	119.			
NORTHWEST	0.	0.	0.	12.	24.	35.	43.	49.	50.	49.	43.	66.	82.	68.	0.	0.	0.	521.	107.	134.	85.	99.			
NORTH	0.	0.	0.	12.	24.	35.	43.	49.	50.	49.	43.	35.	24.	12.	0.	0.	0.	375.	97.	117.	80.	90.			
NORTHEAST	0.	0.	0.	68.	82.	66.	43.	49.	50.	49.	43.	35.	24.	12.	0.	0.	0.	521.	107.	134.	85.	99.			
EAST	0.	0.	0.	108.	154.	156.	134.	97.	50.	49.	43.	35.	24.	12.	0.	0.	0.	863.	130.	175.	97.	119.			
SOUTHEAST	0.	0.	0.	91.	150.	176.	180.	166.	137.	87.	51.	35.	24.	12.	0.	0.	0.	1118.	147.	206.	105.	135.			
HORIZ.	0.	0.	1.	36.	98.	136.	173.	196.	204.	196.	173.	136.	88.	36.	1.	0.	0.	1463.	171.	247.	117.	156.			



LOCATION	LINCOLN, NEBRASKA				LATITUDE 40 DEGREES				51 MINUTES															
MONTH 10	HO	1920.	TOD	60.	TOT	55.	KT	.596	KD	.175														
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD				
SOUTH	0.	0.	0.	12.	81.	135.	174.	198.	207.	198.	174.	135.	81.	12.	0.	0.	0.	1408.	161.	243.	100.	137.		
SOUTHWEST	0.	0.	0.	3.	15.	26.	64.	115.	158.	189.	203.	193.	148.	28.	0.	0.	0.	1143.	142.	209.	92.	122.		
WEST	0.	0.	0.	3.	15.	26.	35.	40.	42.	93.	133.	153.	137.	30.	0.	0.	0.	708.	111.	152.	78.	96.		
NORTHWEST	0.	0.	0.	3.	15.	26.	35.	40.	42.	40.	35.	39.	54.	16.	0.	0.	0.	347.	85.	105.	66.	75.		
NORTH	0.	0.	0.	3.	15.	26.	35.	40.	42.	40.	35.	26.	15.	3.	0.	0.	0.	282.	80.	97.	64.	72.		
NORTHEAST	0.	0.	0.	16.	54.	39.	35.	40.	42.	40.	35.	26.	15.	3.	0.	0.	0.	347.	85.	105.	66.	75.		
EAST	0.	0.	0.	30.	137.	153.	133.	93.	42.	40.	35.	26.	15.	3.	0.	0.	0.	708.	111.	152.	78.	96.		
SOUTHEAST	0.	0.	0.	28.	148.	193.	203.	189.	158.	115.	64.	26.	15.	3.	0.	0.	0.	1143.	142.	209.	92.	122.		
HORIZ.	0.	0.	0.	7.	55.	105.	145.	170.	179.	170.	145.	105.	55.	7.	0.	0.	0.	1143.	142.	209.	92.	122.		

MONTH 11	HO	1371.	TOD	43.	TOT	39.	KT	.508	KD	.187												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	0.	0.	48.	108.	146.	169.	176.	169.	146.	108.	48.	0.	0.	0.	0.	1120.	133.	207.	75.	104.
SOUTHWEST	0.	0.	0.	0.	8.	20.	61.	101.	134.	156.	162.	143.	78.	0.	0.	0.	0.	863.	113.	169.	67.	89.
WEST	0.	0.	0.	0.	8.	18.	26.	31.	33.	70.	98.	105.	66.	0.	0.	0.	0.	454.	80.	110.	54.	66.
NORTHWEST	0.	0.	0.	0.	8.	18.	26.	31.	33.	31.	26.	18.	20.	0.	0.	0.	0.	211.	60.	74.	46.	51.
NORTH	0.	0.	0.	0.	8.	18.	26.	31.	33.	31.	26.	18.	8.	0.	0.	0.	0.	198.	59.	72.	46.	51.
NORTHEAST	0.	0.	0.	0.	20.	18.	26.	31.	33.	31.	26.	18.	8.	0.	0.	0.	0.	211.	60.	74.	46.	51.
EAST	0.	0.	0.	0.	66.	105.	98.	70.	33.	31.	26.	18.	8.	0.	0.	0.	0.	454.	80.	110.	54.	66.
SOUTHEAST	0.	0.	0.	0.	78.	143.	162.	156.	134.	101.	61.	20.	8.	0.	0.	0.	0.	863.	113.	169.	67.	89.
HORIZ.	0.	0.	0.	0.	21.	60.	93.	114.	121.	114.	93.	60.	21.	0.	0.	0.	0.	698.	99.	145.	62.	80.

MONTH 12	HO	1167.	TOD	32.	TOT	28.	KT	.545	KD	.182												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	0.	0.	35.	117.	164.	190.	199.	190.	164.	117.	35.	0.	0.	0.	0.	1211.	135.	219.	67.	90.
SOUTHWEST	0.	0.	0.	0.	5.	22.	67.	112.	149.	174.	178.	151.	55.	0.	0.	0.	0.	913.	109.	173.	57.	81.
WEST	0.	0.	0.	0.	5.	15.	23.	28.	30.	72.	102.	106.	45.	0.	0.	0.	0.	424.	68.	97.	42.	53.
NORTHWEST	0.	0.	0.	0.	5.	15.	23.	28.	30.	28.	23.	15.	12.	0.	0.	0.	0.	177.	47.	59.	34.	38.
NORTH	0.	0.	0.	0.	5.	15.	23.	28.	30.	28.	23.	15.	5.	0.	0.	0.	0.	170.	46.	58.	34.	38.
NORTHEAST	0.	0.	0.	0.	12.	15.	23.	28.	30.	28.	23.	15.	5.	0.	0.	0.	0.	177.	47.	59.	34.	38.
EAST	0.	0.	0.	0.	45.	106.	102.	72.	30.	28.	23.	15.	5.	0.	0.	0.	0.	424.	68.	97.	42.	53.
SOUTHEAST	0.	0.	0.	0.	55.	151.	178.	174.	149.	112.	67.	22.	5.	0.	0.	0.	0.	913.	109.	173.	57.	81.
HORIZ.	0.	0.	0.	0.	12.	52.	87.	110.	117.	110.	87.	52.	12.	0.	0.	0.	0.	636.	86.	130.	49.	65.

LOCATION	LINCOLN, NEBRASKA												
	LATITUDE 40 DEGREES 51 MINUTES												
	ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)												
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	128.	119.	115.	109.	113.	120.	131.	144.	154.	161.	133.	135.	130.
SOUTHWEST	104.	103.	110.	114.	123.	132.	141.	149.	147.	142.	113.	109.	124.
WEST	67.	78.	95.	110.	125.	137.	144.	144.	130.	111.	80.	68.	107.
NORTHWEST	45.	57.	75.	95.	113.	126.	131.	125.	107.	85.	60.	47.	89.
NORTH	44.	52.	66.	83.	99.	112.	117.	110.	97.	80.	59.	46.	81.
NORTHEAST	45.	57.	75.	95.	113.	126.	131.	125.	107.	85.	60.	47.	89.
EAST	67.	78.	95.	110.	125.	137.	144.	144.	130.	111.	80.	68.	107.
SOUTHEAST	104.	103.	110.	114.	123.	132.	141.	149.	147.	142.	113.	109.	124.
HORIZ.	88.	106.	130.	150.	173.	188.	195.	193.	171.	142.	99.	86.	143.
	ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)												
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	209.	189.	175.	153.	149.	154.	168.	193.	218.	243.	207.	219.	190.
SOUTHWEST	167.	162.	165.	161.	166.	175.	186.	202.	206.	209.	169.	173.	178.
WEST	100.	116.	138.	154.	170.	183.	190.	193.	175.	152.	110.	97.	148.
NORTHWEST	59.	77.	101.	128.	149.	165.	168.	160.	134.	105.	74.	59.	115.
NORTH	57.	69.	86.	106.	125.	140.	143.	133.	117.	97.	72.	58.	100.
NORTHEAST	59.	77.	101.	128.	149.	165.	168.	160.	134.	105.	74.	59.	115.
EAST	100.	116.	138.	154.	170.	183.	190.	193.	175.	152.	110.	97.	148.
SOUTHEAST	167.	162.	165.	161.	166.	175.	186.	202.	206.	209.	169.	173.	178.
HORIZ.	137.	166.	202.	226.	255.	274.	280.	280.	247.	209.	145.	130.	213.
	ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)												
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	64.	67.	75.	82.	90.	100.	108.	112.	109.	100.	75.	67.	87.
SOUTHWEST	54.	60.	72.	84.	96.	107.	114.	115.	105.	92.	67.	57.	85.
WEST	40.	49.	65.	82.	97.	110.	115.	112.	97.	78.	54.	42.	78.
NORTHWEST	31.	39.	55.	74.	90.	103.	108.	101.	85.	66.	46.	34.	69.
NORTH	30.	37.	50.	67.	82.	95.	99.	93.	80.	64.	46.	34.	65.
NORTHEAST	31.	39.	55.	74.	90.	103.	108.	101.	85.	66.	46.	34.	69.
EAST	40.	49.	65.	82.	97.	110.	115.	112.	97.	78.	54.	42.	78.
SOUTHEAST	54.	60.	72.	84.	96.	107.	114.	115.	105.	92.	67.	57.	85.
HORIZ.	48.	61.	83.	104.	126.	142.	146.	139.	117.	92.	62.	49.	97.
	ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)												
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	96.	99.	105.	106.	112.	121.	130.	139.	141.	137.	104.	99.	116.
SOUTHWEST	79.	86.	100.	110.	122.	134.	141.	145.	135.	122.	89.	81.	112.
WEST	53.	66.	86.	106.	124.	139.	144.	139.	119.	96.	66.	53.	99.
NORTHWEST	37.	48.	68.	92.	112.	127.	130.	121.	99.	75.	51.	38.	83.
NORTH	36.	45.	60.	80.	98.	112.	115.	106.	90.	72.	51.	38.	75.
NORTHEAST	37.	48.	68.	92.	112.	127.	130.	121.	99.	75.	51.	38.	83.
EAST	53.	66.	86.	106.	124.	139.	144.	139.	119.	96.	66.	53.	99.
SOUTHEAST	79.	86.	100.	110.	122.	134.	141.	145.	135.	122.	89.	81.	112.
HORIZ.	68.	88.	119.	147.	176.	195.	198.	188.	156.	122.	80.	65.	133.

LOCATION LITTLE ROCK, ARKANSAS LATITUDE 34 DEGREES 44 MINUTES

MONTH	1	HO	1716.	TOD	45.	TOT	42.	HOURLY SOLAR RADIATION								KT	.424	KD	.184				DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20											
SOUTH	0.	0.	0.	0.	52.	89.	114.	129.	134.	129.	114.	89.	52.	0.	0.	0.	0.	904.	114.	170.	71.	94.						
SOUTHWEST	0.	0.	0.	0.	11.	21.	51.	81.	106.	122.	128.	118.	82.	0.	0.	0.	0.	721.	100.	145.	65.	84.						
WEST	0.	0.	0.	0.	11.	21.	29.	34.	36.	63.	83.	90.	71.	0.	0.	0.	0.	441.	78.	106.	56.	68.						
NORTHWEST	0.	0.	0.	0.	11.	21.	29.	34.	36.	34.	29.	22.	25.	0.	0.	0.	0.	244.	63.	79.	50.	56.						
NORTH	0.	0.	0.	0.	11.	21.	29.	34.	36.	34.	29.	21.	11.	0.	0.	0.	0.	230.	62.	76.	49.	55.						
NORTHEAST	0.	0.	0.	0.	25.	22.	29.	34.	36.	34.	29.	21.	11.	0.	0.	0.	0.	244.	63.	79.	50.	56.						
EAST	0.	0.	0.	0.	71.	90.	83.	63.	36.	34.	29.	21.	11.	0.	0.	0.	0.	441.	78.	106.	56.	68.						
SOUTHEAST	0.	0.	0.	0.	82.	118.	128.	122.	106.	81.	51.	21.	11.	0.	0.	0.	0.	721.	100.	145.	65.	84.						
HORIZ.	0.	0.	0.	1.	30.	66.	94.	112.	119.	112.	94.	66.	30.	1.	0.	0.	0.	726.	100.	145.	65.	84.						

MONTH	2	HO	2248.	TOD	48.	TOT	46.	KT	.458	KD	.186											
ORIENTATION:																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	18.	62.	95.	120.	135.	140.	135.	120.	95.	62.	18.	0.	0.	0.	999.	118.	175.	78.	104.
SOUTHWEST	0.	0.	0.	6.	18.	29.	51.	84.	112.	132.	141.	135.	110.	43.	0.	0.	0.	861.	109.	158.	73.	96.
WEST	0.	0.	0.	6.	18.	29.	38.	43.	45.	77.	101.	113.	105.	46.	0.	0.	0.	621.	92.	127.	66.	82.
NORTHWEST	0.	0.	0.	6.	18.	29.	38.	43.	45.	43.	38.	42.	49.	25.	0.	0.	0.	375.	75.	96.	58.	67.
NORTH	0.	0.	0.	6.	18.	29.	38.	43.	45.	43.	38.	29.	18.	6.	0.	0.	0.	313.	70.	88.	56.	64.
NORTHEAST	0.	0.	0.	25.	49.	42.	38.	43.	45.	43.	38.	29.	18.	6.	0.	0.	0.	375.	75.	96.	58.	67.
EAST	0.	0.	0.	46.	105.	113.	101.	77.	45.	43.	38.	29.	18.	6.	0.	0.	0.	621.	92.	127.	66.	82.
SOUTHEAST	0.	0.	0.	43.	110.	135.	141.	132.	112.	84.	51.	29.	18.	6.	0.	0.	0.	861.	109.	158.	73.	96.
HORIZ.	0.	0.	0.	13.	56.	96.	127.	147.	154.	147.	127.	96.	56.	13.	0.	0.	0.	1031.	121.	179.	79.	106.

MONTH	3	HO	2809.	TOD	56.	TOT	53.	KT	.496	KD	.188											
ORIENTATION	4	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
		5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGS		
SOUTH	0.	0.	0.	25.	60.	92.	117.	132.	138.	132.	117.	92.	60.	25.	0.	0.	0.	992.	119.	171.	85.	111.
SOUTHWEST	0.	0.	0.	13.	26.	37.	46.	82.	113.	136.	147.	145.	126.	81.	0.	0.	0.	952.	117.	167.	83.	108.
WEST	0.	0.	0.	13.	26.	37.	46.	52.	54.	90.	118.	135.	133.	97.	0.	0.	0.	801.	107.	149.	78.	99.
NORTHWEST	0.	0.	0.	13.	26.	37.	46.	52.	54.	52.	47.	67.	77.	64.	0.	0.	0.	535.	90.	118.	70.	84.
NORTH	0.	0.	0.	13.	26.	37.	46.	52.	54.	52.	46.	37.	26.	13.	0.	0.	0.	402.	82.	103.	66.	76.
NORTHEAST	0.	0.	0.	64.	77.	67.	47.	52.	54.	52.	46.	37.	26.	13.	0.	0.	0.	535.	90.	118.	70.	84.
EAST	0.	0.	0.	97.	133.	135.	118.	90.	54.	52.	46.	37.	26.	13.	0.	0.	0.	801.	107.	149.	78.	99.
SOUTHEAST	0.	0.	0.	81.	126.	145.	147.	136.	113.	82.	46.	37.	26.	13.	0.	0.	0.	952.	117.	167.	83.	108.
HORIZ.	0.	0.	0.	37.	96.	129.	163.	184.	192.	184.	163.	129.	86.	37.	0.	0.	0.	1391.	145.	218.	97.	134.

LOCATION LITTLE ROCK, ARKANSAS LATITUDE 34 DEGREES 44 MINUTES

MONTH	4	HO	3328.	TOD	66.	TOT	63.	KT	.513	KD	.186											
ORIENTATION	4	5	6	7	8	9	HOURLY SOLAR RADIATION								DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY				
							10	11	12	13	14	15	16	17		18	19	20	SAT6S	SAT6D	SAT6S	SAT6D
SOUTH	0.	0.	6.	19.	47.	76.	100.	114.	120.	114.	100.	76.	47.	19.	6.	0.	0.	845.	115.	156.	90.	112.
SOUTHWEST	0.	0.	6.	19.	32.	43.	52.	70.	102.	126.	138.	138.	123.	90.	30.	0.	0.	970.	123.	169.	94.	119.
WEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	97.	126.	144.	146.	122.	46.	0.	0.	952.	122.	167.	93.	118.
NORTHWEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	57.	71.	92.	102.	94.	40.	0.	0.	726.	108.	143.	86.	105.
NORTH	0.	0.	13.	22.	32.	43.	52.	57.	59.	57.	52.	43.	32.	22.	13.	0.	0.	501.	95.	119.	79.	92.
NORTHEAST	0.	0.	40.	94.	102.	92.	71.	57.	59.	57.	52.	43.	32.	19.	6.	0.	0.	726.	108.	143.	86.	105.
EAST	0.	0.	46.	122.	146.	144.	126.	97.	59.	57.	52.	43.	32.	19.	6.	0.	0.	952.	122.	167.	93.	118.
SOUTHEAST	0.	0.	30.	90.	123.	138.	138.	126.	102.	70.	52.	43.	32.	19.	6.	0.	0.	970.	123.	169.	94.	119.
HORIZ.	0.	0.	14.	62.	112.	156.	190.	211.	218.	211.	190.	156.	112.	62.	14.	0.	0.	1708.	166.	248.	117.	162.

MONTH	5	HO	3633.	TOD	73.	TOT	70.	KT	.545	KD	.182						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0	0	11.	24.	36.	62.	85.	100.	105.	100.	85.	62.	36.	24.	11.	0	0.
SOUTHWEST	0	0	11.	24.	36.	47.	55.	60.	92.	117.	132.	133.	120.	92.	47.	0	0.
WEST	0	0	11.	24.	36.	47.	55.	60.	62.	102.	133.	154.	158.	140.	84.	0	0.
NORTHWEST	0	0	11.	24.	36.	47.	55.	60.	62.	61.	89.	112.	124.	119.	78.	0	0.
NORTH	0	0	33.	42.	39.	47.	55.	60.	62.	60.	55.	47.	39.	42.	33.	0	0.
NORTHEAST	0	0	78.	119.	124.	112.	89.	61.	62.	60.	55.	47.	36.	24.	11.	0	0.
EAST	0	0	84.	140.	158.	154.	133.	102.	62.	60.	55.	47.	36.	24.	11.	0	0.
SOUTHEAST	0	0	47.	92.	120.	133.	132.	117.	92.	60.	55.	47.	36.	24.	11.	0	0.
HORIZ.	0	0	31.	82.	133.	177.	212.	234.	241.	234.	212.	177.	133.	82.	31.	0	0.

MONTH	6	HO	3738.	TOD	77.	TOT	78.	KT	.559	KD	.180						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	1.	12.	25.	37.	55.	78.	92.	98.	92.	78.	55.	37.	25.	12.	1.	0.
SOUTHWEST	0.	1.	12.	25.	37.	48.	56.	61.	67.	113.	128.	130.	118.	92.	50.	2.	0.
WEST	0.	1.	12.	25.	37.	48.	56.	61.	63.	103.	136.	157.	162.	145.	94.	2.	0.
NORTHWEST	0.	1.	12.	25.	37.	48.	56.	61.	63.	68.	97.	120.	132.	128.	91.	2.	0.
NORTH	0.	2.	42.	51.	48.	48.	56.	61.	63.	61.	56.	48.	48.	51.	42.	2.	0.
NORTHEAST	0.	2.	91.	128.	132.	120.	97.	68.	63.	61.	56.	48.	37.	25.	12.	1.	0.
EAST	0.	2.	94.	145.	162.	157.	136.	103.	63.	61.	56.	48.	37.	25.	12.	1.	0.
SOUTHEAST	0.	2.	50.	92.	118.	130.	128.	113.	87.	61.	56.	48.	37.	25.	12.	1.	0.
HORIZ.	0.	2.	38.	89.	141.	186.	221.	243.	250.	243.	221.	186.	141.	89.	38.	2.	0.



LOCATION	LITTLE ROCK, ARKANSAS				LATITUDE				34 DEGREES				44 MINUTES																			
MONTH	7	H0	3628.	T00	85.	TOT	82.	KT	.566	KD	.179																					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD										
SOUTH	0.	0.	11.	24.	36.	62.	86.	102.	107.	102.	86.	62.	36.	24.	11.	0.	0.	750.	129.	163.	108.	127.										
SOUTHWEST	0.	0.	11.	24.	36.	47.	55.	60.	94.	121.	136.	138.	125.	96.	47.	0.	0.	990.	143.	188.	116.	142.										
WEST	0.	0.	11.	24.	36.	47.	55.	60.	62.	104.	139.	160.	165.	145.	86.	0.	0.	1094.	149.	198.	119.	148.										
NORTHWEST	0.	0.	11.	24.	36.	47.	55.	60.	62.	62.	92.	116.	129.	124.	80.	0.	0.	899.	138.	178.	113.	136.										
NORTH	0.	0.	34.	44.	39.	47.	55.	60.	62.	60.	55.	47.	39.	44.	34.	0.	0.	620.	121.	149.	103.	119.										
NORTHEAST	0.	0.	80.	124.	129.	116.	92.	62.	62.	60.	55.	47.	36.	24.	11.	0.	0.	899.	138.	178.	113.	136.										
EAST	0.	0.	86.	145.	165.	160.	139.	104.	62.	60.	55.	47.	36.	24.	11.	0.	0.	1094.	149.	198.	119.	148.										
SOUTHEAST	0.	0.	47.	96.	125.	138.	136.	121.	94.	60.	55.	47.	36.	24.	11.	0.	0.	990.	143.	188.	116.	142.										
HORIZ.	0.	0.	31.	84.	137.	184.	220.	243.	251.	243.	220.	184.	137.	84.	31.	0.	0.	2052.	205.	298.	152.	206.										
MONTH	8	H0	3303.	T00	85.	TOT	81.	KT	.574	KD	.178																					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD										
SOUTH	0.	0.	6.	19.	49.	83.	110.	127.	133.	127.	110.	83.	49.	19.	6.	0.	0.	920.	142.	186.	113.	137.										
SOUTHWEST	0.	0.	6.	19.	32.	44.	53.	73.	111.	140.	156.	157.	140.	102.	31.	0.	0.	1064.	151.	202.	118.	146.										
WEST	0.	0.	6.	19.	32.	44.	53.	58.	60.	105.	142.	165.	167.	139.	48.	0.	0.	1039.	150.	199.	117.	144.										
NORTHWEST	0.	0.	6.	19.	32.	44.	53.	58.	60.	58.	76.	102.	116.	106.	41.	0.	0.	771.	133.	170.	108.	128.										
NORTH	0.	0.	13.	23.	32.	44.	53.	58.	60.	58.	53.	44.	32.	23.	13.	0.	0.	505.	116.	140.	99.	112.										
NORTHEAST	0.	0.	41.	106.	116.	102.	76.	58.	60.	58.	53.	44.	32.	19.	6.	0.	0.	771.	133.	170.	108.	128.										
EAST	0.	0.	48.	139.	167.	165.	142.	105.	60.	58.	53.	44.	32.	19.	6.	0.	0.	1039.	150.	199.	117.	144.										
SOUTHEAST	0.	0.	31.	102.	140.	157.	156.	140.	111.	73.	53.	44.	32.	19.	6.	0.	0.	1064.	151.	202.	118.	146.										
HORIZ.	0.	0.	14.	67.	123.	173.	212.	237.	245.	237.	212.	173.	123.	67.	14.	0.	0.	1896.	203.	284.	146.	196.										
MONTH	9	H0	2793.	T00	78.	TOT	75.	KT	.561	KD	.179																					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD										
SOUTH	0.	0.	0.	27.	67.	104.	133.	151.	158.	151.	133.	104.	67.	27.	0.	0.	0.	1122.	155.	213.	113.	143.										
SOUTHWEST	0.	0.	0.	13.	26.	38.	47.	89.	127.	156.	171.	169.	146.	92.	0.	0.	0.	1073.	151.	207.	112.	140.										
WEST	0.	0.	0.	13.	26.	38.	47.	52.	54.	100.	136.	157.	155.	111.	0.	0.	0.	888.	139.	185.	105.	128.										
NORTHWEST	0.	0.	0.	13.	26.	38.	47.	52.	54.	52.	49.	75.	88.	72.	0.	0.	0.	567.	117.	146.	94.	109.										
NORTH	0.	0.	0.	13.	26.	38.	47.	52.	54.	52.	47.	38.	26.	13.	0.	0.	0.	406.	106.	127.	94.	99.										
NORTHEAST	0.	0.	0.	72.	88.	75.	49.	52.	54.	52.	47.	38.	26.	13.	0.	0.	0.	567.	117.	146.	94.	109.										
EAST	0.	0.	0.	111.	155.	157.	136.	100.	54.	52.	47.	38.	26.	13.	0.	0.	0.	888.	139.	185.	105.	128.										
SOUTHEAST	0.	0.	0.	92.	146.	169.	171.	156.	127.	89.	47.	38.	26.	13.	0.	0.	0.	1073.	151.	207.	112.	140.										
HORIZ.	0.	0.	0.	39.	95.	145.	184.	209.	218.	209.	184.	145.	95.	39.	0.	0.	0.	1565.	185.	267.	128.	169.										

LOCATION LITTLE ROCK, ARKANSAS LATITUDE 34 DEGREES 44 MINUTES

MONTH 10 HO 2214. TOD 68. TOT 64. KT .552 KD .181

ORIENTATION <sup>1</sup>	HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	20.	77.	120.	151.	171.	177.	171.	151.	120.	77.	20.	0.	0.	0.	1254.	156.	227.	104.	137.
SOUTHWEST	0.	0.	0.	5.	18.	30.	57.	101.	139.	167.	179.	173.	140.	48.	0.	0.	0.	1060.	142.	203.	98.	126.
WEST	0.	0.	0.	5.	18.	30.	39.	45.	47.	41.	125.	143.	133.	51.	0.	0.	0.	728.	119.	161.	87.	107.
NORTHWEST	0.	0.	0.	0.	5.	18.	30.	39.	45.	47.	45.	39.	47.	58.	0.	0.	0.	401.	96.	119.	77.	87.
NORTH	0.	0.	0.	0.	5.	18.	30.	39.	45.	47.	45.	39.	30.	18.	5.	0.	0.	323.	91.	109.	74.	83.
NORTHEAST	0.	0.	0.	28.	58.	47.	39.	45.	47.	45.	39.	30.	18.	5.	0.	0.	0.	401.	96.	119.	77.	87.
EAST	0.	0.	0.	51.	133.	143.	125.	91.	47.	45.	39.	30.	18.	5.	0.	0.	0.	728.	119.	161.	87.	107.
SOUTHEAST	0.	0.	0.	48.	140.	173.	179.	167.	139.	101.	57.	30.	18.	5.	0.	0.	0.	1060.	142.	203.	98.	126.
HORIZ.	0.	0.	0.	13.	64.	113.	152.	177.	185.	177.	152.	113.	64.	13.	0.	0.	0.	1223.	154.	223.	103.	135.

MONTH 11 HO 1704. TOD 55. TOT 51. KT .484 KD .187

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	0.	60.	106.	136.	154.	160.	154.	136.	106.	60.	0.	0.	0.	1073.	137.	204.	86.	114.
SOUTHWEST	0.	0.	0.	0.	11.	22.	58.	94.	124.	145.	152.	141.	97.	0.	0.	0.	0.	846.	120.	172.	79.	101.
WEST	0.	0.	0.	0.	11.	22.	31.	36.	38.	72.	97.	107.	84.	0.	0.	0.	0.	500.	93.	124.	68.	81.
NORTHWEST	0.	0.	0.	0.	11.	22.	31.	36.	38.	36.	31.	23.	28.	0.	0.	0.	0.	258.	74.	91.	60.	67.
NORTH	0.	0.	0.	0.	11.	22.	31.	36.	38.	36.	31.	22.	11.	0.	0.	0.	0.	241.	73.	88.	59.	66.
NORTHEAST	0.	0.	0.	0.	28.	23.	31.	36.	38.	36.	31.	22.	11.	0.	0.	0.	0.	258.	74.	91.	60.	67.
EAST	0.	0.	0.	0.	84.	107.	97.	72.	38.	36.	31.	22.	11.	0.	0.	0.	0.	500.	93.	124.	68.	81.
SOUTHEAST	0.	0.	0.	0.	97.	141.	152.	145.	124.	94.	58.	22.	11.	0.	0.	0.	0.	846.	120.	172.	79.	101.
HORIZ.	0.	0.	0.	0.	33.	74.	107.	128.	135.	128.	107.	74.	33.	0.	0.	0.	0.	823.	118.	169.	78.	99.

MONTH 12 HO 1507. TOD 47. TOT 44. KT .463 KD .186

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	51.	100.	130.	148.	154.	148.	130.	100.	51.	0.	0.	0.	0.	1012.	127.	193.	76.	103.
SOUTHWEST	0.	0.	0.	0.	9.	23.	57.	91.	119.	137.	143.	129.	79.	0.	0.	0.	0.	787.	109.	161.	69.	90.
WEST	0.	0.	0.	0.	9.	19.	27.	33.	34.	65.	88.	94.	66.	0.	0.	0.	0.	435.	81.	110.	58.	69.
NORTHWEST	0.	0.	0.	0.	9.	19.	27.	33.	34.	33.	27.	19.	9.	0.	0.	0.	0.	220.	64.	79.	51.	57.
NORTH	0.	0.	0.	0.	9.	19.	27.	33.	34.	33.	27.	19.	9.	0.	0.	0.	0.	210.	63.	77.	51.	56.
NORTHEAST	0.	0.	0.	0.	19.	19.	27.	33.	34.	33.	27.	19.	9.	0.	0.	0.	0.	220.	64.	79.	51.	57.
EAST	0.	0.	0.	0.	66.	94.	88.	65.	34.	33.	27.	19.	9.	0.	0.	0.	0.	435.	81.	110.	58.	69.
SOUTHEAST	0.	0.	0.	0.	79.	129.	143.	137.	119.	91.	57.	23.	9.	0.	0.	0.	0.	787.	109.	161.	69.	90.
HORIZ.	0.	0.	0.	0.	24.	62.	92.	112.	119.	112.	92.	62.	24.	0.	0.	0.	0.	698.	102.	148.	66.	85.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	114.	118.	119.	115.	116.	117.	129.	142.	155.	156.	137.	127.	129.
SOUTHWEST	100.	109.	117.	123.	130.	132.	143.	151.	151.	142.	120.	109.	127.
WEST	78.	92.	107.	122.	136.	140.	149.	150.	139.	119.	93.	81.	117.
NORTHWEST	63.	75.	90.	108.	125.	131.	138.	133.	117.	96.	74.	64.	101.
NORTH	62.	70.	82.	95.	109.	115.	121.	116.	106.	91.	73.	63.	92.
NORTHEAST	63.	75.	90.	108.	125.	131.	138.	133.	117.	96.	74.	64.	101.
EAST	78.	92.	107.	122.	136.	140.	149.	150.	139.	119.	93.	81.	117.
SOUTHEAST	100.	109.	117.	123.	130.	132.	143.	151.	151.	120.	109.	127.	127.
HORIZ.	100.	121.	145.	166.	189.	196.	205.	203.	185.	154.	118.	102.	157.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	170.	175.	171.	156.	150.	148.	163.	186.	213.	227.	204.	193.	180.
SOUTHWEST	145.	158.	167.	169.	173.	174.	188.	202.	207.	203.	172.	161.	177.
WEST	106.	127.	149.	167.	183.	188.	198.	199.	185.	161.	124.	110.	158.
NORTHWEST	79.	96.	118.	143.	164.	172.	178.	170.	146.	119.	91.	79.	130.
NORTH	76.	88.	103.	119.	137.	145.	149.	140.	127.	109.	88.	77.	113.
NORTHEAST	79.	96.	118.	143.	164.	172.	178.	170.	146.	119.	91.	79.	130.
EAST	106.	127.	149.	167.	183.	188.	198.	199.	185.	161.	124.	110.	158.
SOUTHEAST	145.	156.	167.	169.	173.	174.	188.	202.	207.	203.	172.	161.	177.
HORIZ.	145.	179.	218.	248.	278.	288.	298.	294.	267.	223.	169.	148.	230.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	71.	78.	85.	90.	95.	102.	108.	113.	113.	104.	86.	76.	93.
SOUTHWEST	65.	73.	83.	94.	103.	111.	116.	118.	112.	98.	79.	69.	93.
WEST	56.	66.	78.	93.	106.	116.	119.	117.	105.	87.	68.	58.	89.
NORTHWEST	50.	58.	70.	86.	100.	111.	113.	108.	94.	77.	60.	51.	81.
NORTH	49.	56.	66.	79.	91.	102.	103.	99.	89.	74.	59.	51.	76.
NORTHEAST	50.	58.	70.	86.	100.	111.	113.	108.	94.	77.	60.	51.	81.
EAST	56.	66.	78.	93.	106.	116.	119.	117.	105.	87.	68.	58.	89.
SOUTHEAST	65.	73.	83.	94.	103.	111.	116.	118.	112.	98.	79.	69.	93.
HORIZ.	65.	79.	97.	117.	137.	150.	152.	146.	128.	103.	78.	66.	110.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	94.	104.	111.	112.	114.	121.	127.	137.	143.	137.	114.	103.	118.
SOUTHWEST	84.	96.	108.	119.	128.	136.	142.	146.	140.	126.	101.	90.	118.
WEST	68.	82.	99.	118.	134.	145.	148.	144.	128.	107.	81.	69.	110.
NORTHWEST	56.	67.	84.	105.	123.	135.	136.	128.	109.	83.	67.	57.	96.
NORTH	55.	64.	76.	92.	107.	119.	119.	112.	99.	83.	66.	56.	87.
NORTHEAST	56.	67.	84.	105.	123.	135.	136.	128.	109.	87.	67.	57.	96.
EAST	84.	96.	108.	118.	134.	145.	148.	144.	128.	107.	81.	69.	110.
SOUTHEAST	84.	96.	108.	119.	126.	136.	142.	146.	140.	126.	101.	90.	118.
HORIZ.	84.	106.	134.	162.	189.	205.	206.	196.	169.	135.	99.	85.	148.





LOCATION LOS ANGELES, CALIF. WBAS LATITUDE 33 DEGREES 55 MINUTES

MONTH	4	HO	3339.	TOD	61.	TOT	59.	KT	.595	KD	.175						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	6.	19.	50.	85.	112.	130.	136.	130.	112.	85.	50.	19.	6.	0.	0.
SOUTHWEST	0.	0.	6.	19.	33.	44.	53.	74.	114.	145.	162.	164.	148.	110.	35.	0.	0.
WEST	0.	0.	6.	19.	33.	44.	53.	59.	61.	109.	149.	174.	179.	152.	56.	0.	0.
NORTHWEST	0.	0.	6.	19.	33.	44.	53.	59.	61.	59.	79.	108.	124.	116.	47.	0.	0.
NORTH	0.	0.	15.	24.	33.	44.	53.	59.	61.	59.	53.	44.	33.	24.	15.	0.	0.
NORTHEAST	0.	0.	47.	116.	124.	108.	79.	59.	61.	59.	53.	44.	33.	19.	6.	0.	0.
EAST	0.	0.	56.	152.	179.	174.	149.	109.	61.	59.	53.	44.	33.	19.	6.	0.	0.
SOUTHEAST	0.	0.	35.	110.	148.	164.	162.	145.	114.	74.	53.	44.	33.	19.	6.	0.	0.
HORIZ.	0.	0.	15.	70.	129.	182.	222.	248.	256.	248.	222.	182.	129.	70.	15.	0.	0.
													</				

MONTH	5	HO	3633.	TOD	64.	TOT	62.	KT	.610	KD	.172						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0	0	10	24	36	64	89	106	112	106	89	64	36	24	10	0	0
SOUTHWEST	0	0	10	24	36	47	56	61	98	128	147	150	137	106	52	0	0
WEST	0	0	10	24	36	47	56	61	63	111	150	176	183	163	96	0	0
NORTHWEST	0	0	10	24	36	47	56	61	63	65	99	127	143	139	90	0	0
NORTH	0	0	37	47	41	47	56	61	63	61	56	47	41	47	37	0	0
NORTHEAST	0	0	90	139	143	127	99	65	63	61	56	47	36	24	10	0	0
EAST	0	0	96	163	183	176	150	111	63	61	56	47	36	24	10	0	0
SOUTHEAST	0	0	52	106	137	150	147	128	98	61	56	47	36	24	10	0	0
HORIZ.	0	0	32	90	148	199	239	264	272	264	239	199	148	90	32	0	0

MONTH	6	HO	3732.	TOD	67.	TOT	65.	KT	.608	KD	.172						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	1.	12.	25.	37.	54.	79.	95.	101.	95.	79.	54.	37.	25.	12.	1.	0.
SOUTHWEST	0.	1.	12.	25.	37.	48.	57.	62.	90.	120.	137.	141.	129.	100.	54.	1.	0.
WEST	0.	1.	12.	25.	37.	48.	57.	62.	64.	110.	148.	173.	180.	162.	104.	1.	0.
NORTHWEST	0.	1.	12.	25.	37.	48.	57.	62.	64.	72.	105.	132.	148.	144.	100.	1.	0.
NORTH	0.	1.	45.	56.	51.	48.	57.	62.	64.	62.	57.	48.	51.	56.	45.	1.	0.
NORTHEAST	0.	1.	100.	144.	148.	132.	105.	72.	64.	62.	57.	48.	37.	25.	12.	1.	0.
EAST	0.	1.	104.	162.	180.	173.	148.	110.	64.	62.	57.	48.	37.	25.	12.	1.	0.
SOUTHEAST	0.	1.	54.	100.	129.	141.	137.	120.	90.	62.	57.	48.	37.	25.	12.	1.	0.
HORIZ.	0.	2.	39.	96.	153.	202.	241.	265.	274.	265.	241.	202.	153.	96.	39.	2.	0.



LOCATION LOS ANGELES, CALIF. WRAS LATITUDE 33 DEGREES 55 MINUTES

MONTH	10	HO	2251.	TOD	66.	TOT	63.	HOURLY SOLAR RADIATION												KT	.574	KD	.178	DAILY TOTAL RADIATION				SAG/DAYTIME SAGS/ALL DAY SAGS SATGD		SATGD SAT6S SAT6S SAT6S SAT6S	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20														
SOUTH	0.	0.	0.	22.	91.	125.	158.	178.	185.	178.	158.	125.	81.	22.	0.	0.	0.	1313.	158.	233.	106.	140.									
SOUTHWEST	0.	0.	0.	6.	19.	31.	58.	105.	145.	174.	189.	183.	149.	54.	0.	0.	0.	1112.	144.	207.	99.	128.									
WEST	0.	0.	0.	6.	19.	31.	40.	46.	48.	45.	132.	152.	141.	57.	0.	0.	0.	766.	120.	163.	88.	108.									
NORTHWEST	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	49.	62.	31.	0.	0.	0.	417.	95.	119.	77.	88.									
NORTH	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	31.	19.	6.	0.	0.	0.	330.	89.	108.	74.	83.									
NORTHEAST	0.	0.	0.	31.	62.	49.	40.	46.	48.	46.	40.	31.	19.	6.	0.	0.	0.	417.	95.	119.	77.	88.									
EAST	0.	0.	0.	57.	141.	152.	132.	95.	48.	46.	40.	31.	19.	6.	0.	0.	0.	766.	120.	163.	88.	108.									
SOUTHEAST	0.	0.	0.	54.	149.	183.	189.	174.	145.	105.	58.	31.	19.	6.	0.	0.	0.	1112.	144.	207.	99.	128.									
HORIZ.	0.	0.	0.	14.	68.	120.	161.	186.	195.	186.	161.	120.	68.	14.	0.	0.	0.	1293.	156.	230.	105.	139.									

MONTH 11	HO 1747.	TOD 63.	TOT 59.	KT .551	KD .181													DAILY TOTAL RADIATION		SAG/DAYTIME SAGS SATGD		SAG/ALL DAY SAGS SATGD							
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20												
SOUTH	0.	0.	0.	1.	74.	127.	162.	183.	190.	183.	162.	127.	74.	1.	0.	0.	0.	1286.	160.	240.	101.	134.							
SOUTHWEST	0.	0.	0.	1.	12.	23.	36.	109.	146.	172.	183.	171.	121.	1.	0.	0.	0.	1006.	139.	202.	92.	118.							
WEST	0.	0.	0.	1.	12.	23.	32.	38.	40.	83.	115.	129.	104.	1.	0.	0.	0.	579.	107.	143.	78.	93.							
NORTHWEST	0.	0.	0.	1.	12.	23.	32.	38.	40.	38.	32.	25.	34.	1.	0.	0.	0.	276.	84.	101.	68.	75.							
NORTH	0.	0.	0.	1.	12.	23.	32.	38.	40.	38.	32.	23.	12.	1.	0.	0.	0.	253.	82.	98.	67.	74.							
NORTHEAST	0.	0.	0.	1.	34.	25.	32.	38.	40.	38.	32.	23.	12.	1.	0.	0.	0.	276.	84.	101.	68.	75.							
EAST	0.	0.	0.	1.	104.	129.	115.	83.	40.	38.	32.	23.	12.	1.	0.	0.	0.	579.	107.	143.	78.	93.							
SOUTHEAST	0.	0.	0.	1.	121.	171.	183.	172.	146.	109.	66.	23.	12.	1.	0.	0.	0.	1006.	139.	202.	92.	118.							
HORIZ.	0.	0.	0.	1.	39.	87.	125.	150.	158.	150.	125.	87.	39.	1.	0.	0.	0.	961.	136.	196.	90.	115.							

MONTH 12	HO 1552.	TOD 59.	TOT 56.	KT .566	KD .179													DAILY TOTAL RADIATION		SAG/DAYTIME SAGS SATGD		SAG/ALL DAY SAGS SATGD							
ORIENTATION:	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20												
SOUTH	0.	0.	0.	0.	71.	134.	172.	195.	202.	195.	172.	134.	71.	0.	0.	0.	0.	1345.	165.	252.	99.	134.							
SOUTHWEST	0.	0.	0.	0.	9.	26.	71.	116.	154.	181.	190.	175.	111.	0.	0.	0.	0.	1033.	140.	207.	89.	116.							
WEST	0.	0.	0.	0.	9.	21.	29.	35.	37.	31.	114.	126.	92.	0.	0.	0.	0.	546.	102.	137.	73.	87.							
NORTHWEST	0.	0.	0.	0.	9.	21.	29.	35.	37.	35.	29.	21.	25.	0.	0.	0.	0.	242.	78.	93.	63.	70.							
NORTH	0.	0.	0.	0.	9.	21.	29.	35.	37.	35.	29.	21.	9.	0.	0.	0.	0.	226.	77.	91.	63.	69.							
NORTHEAST	0.	0.	0.	0.	25.	21.	29.	35.	37.	35.	29.	21.	9.	0.	0.	0.	0.	242.	78.	93.	63.	70.							
EAST	0.	0.	0.	0.	92.	126.	114.	81.	37.	35.	29.	21.	9.	0.	0.	0.	0.	546.	102.	137.	73.	87.							
SOUTHEAST	0.	0.	0.	0.	11.	175.	190.	181.	154.	116.	71.	26.	9.	0.	0.	0.	0.	1033.	140.	207.	89.	116.							
HORIZ.	0.	0.	0.	0.	29.	77.	116.	141.	150.	141.	116.	77.	29.	0.	0.	0.	0.	879.	128.	185.	84.	107.							

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	153.	154.	142.	117.	110.	108.	116.	132.	157.	158.	160.	165.	139.
SOUTHWEST	132.	139.	139.	127.	126.	125.	135.	143.	153.	144.	139.	140.	137.
WEST	100.	114.	125.	126.	134.	135.	143.	142.	138.	120.	107.	102.	124.
NORTHWEST	77.	87.	99.	109.	121.	125.	129.	122.	111.	95.	84.	78.	103.
NORTH	76.	80.	86.	92.	102.	107.	108.	102.	97.	82.	77.	77.	91.
NORTHEAST	77.	87.	99.	109.	121.	125.	129.	122.	111.	95.	84.	78.	103.
EAST	100.	114.	125.	126.	134.	135.	143.	142.	138.	120.	107.	102.	124.
SOUTHEAST	132.	139.	139.	127.	126.	125.	135.	143.	153.	144.	139.	140.	137.
HORIZ.	129.	152.	174.	178.	195.	197.	210.	202.	192.	156.	136.	128.	171.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	233.	233.	210.	162.	145.	139.	152.	179.	224.	233.	240.	252.	200.
SOUTHWEST	194.	206.	204.	180.	174.	170.	185.	199.	218.	207.	202.	207.	195.
WEST	136.	160.	178.	178.	187.	187.	200.	196.	191.	163.	143.	137.	171.
NORTHWEST	95.	112.	131.	148.	164.	169.	174.	162.	143.	119.	101.	93.	134.
NORTH	91.	99.	107.	117.	131.	138.	137.	127.	118.	108.	98.	91.	114.
NORTHEAST	95.	112.	131.	148.	164.	169.	174.	162.	143.	119.	101.	93.	134.
EAST	136.	160.	178.	178.	187.	187.	200.	196.	191.	163.	143.	137.	171.
SOUTHEAST	194.	206.	204.	180.	174.	170.	185.	199.	218.	207.	202.	207.	195.
HORIZ.	189.	229.	268.	274.	295.	297.	318.	303.	286.	230.	196.	185.	256.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	94.	99.	98.	89.	88.	89.	95.	102.	111.	106.	101.	99.	97.
SOUTHWEST	85.	92.	96.	95.	98.	99.	106.	108.	109.	99.	92.	89.	97.
WEST	72.	80.	89.	94.	102.	105.	110.	107.	101.	88.	78.	73.	92.
NORTHWEST	62.	68.	76.	85.	95.	99.	102.	97.	88.	77.	68.	63.	82.
NORTH	61.	65.	70.	76.	84.	89.	90.	86.	81.	74.	67.	63.	75.
NORTHEAST	62.	68.	76.	85.	95.	99.	102.	97.	88.	77.	68.	63.	82.
EAST	72.	80.	89.	94.	102.	105.	110.	107.	101.	88.	78.	73.	92.
SOUTHEAST	85.	92.	96.	95.	98.	99.	106.	108.	109.	99.	92.	89.	97.
HORIZ.	84.	98.	114.	123.	138.	142.	149.	140.	128.	105.	90.	84.	116.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	128.	135.	132.	114.	109.	108.	115.	128.	145.	140.	134.	134.	127.
SOUTHWEST	112.	123.	129.	124.	126.	126.	135.	138.	141.	128.	118.	116.	126.
WEST	87.	102.	116.	123.	133.	136.	143.	137.	128.	108.	93.	87.	116.
NORTHWEST	69.	80.	93.	106.	120.	126.	128.	118.	104.	88.	75.	70.	98.
NORTH	68.	74.	81.	89.	101.	107.	107.	99.	91.	83.	74.	69.	87.
NORTHEAST	69.	80.	93.	106.	120.	126.	128.	118.	104.	88.	75.	70.	98.
EAST	87.	102.	116.	123.	133.	136.	143.	137.	128.	108.	93.	87.	116.
SOUTHEAST	112.	123.	129.	124.	126.	126.	135.	138.	141.	128.	118.	116.	126.
HORIZ.	109.	134.	161.	175.	196.	202.	212.	195.	176.	139.	115.	107.	160.



LOCATION LOS ANGELES, CALIF., WBO LATITUDE 34 DEGREES 3 MINUTES

MONTH	1	HO	1753.	TON	58.	TOT	55.	HOURLY SOLAR RADIATION								KT	538	KD	.183						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20								
SOUTH	0.	0.	0.	1.	73.	124.	157.	177.	184.	177.	157.	124.	73.	1.	0.	0.	0.	1249.	153.	230.	95.	128.			
SOUTHWEST	0.	0.	0.	1.	12.	24.	64.	106.	142.	167.	177.	167.	119.	1.	0.	0.	0.	980.	132.	193.	86.	112.			
WEST	0.	0.	0.	1.	12.	24.	32.	38.	40.	81.	112.	126.	103.	1.	0.	0.	0.	569.	101.	137.	73.	88.			
NORTHWEST	0.	0.	0.	1.	12.	24.	32.	38.	40.	38.	32.	25.	33.	1.	0.	0.	0.	276.	79.	96.	64.	71.			
NORTH	0.	0.	0.	1.	12.	24.	32.	38.	40.	38.	32.	24.	12.	1.	0.	0.	0.	253.	77.	93.	63.	70.			
NORTHEAST	0.	0.	0.	1.	33.	25.	32.	38.	40.	38.	32.	24.	12.	1.	0.	0.	0.	276.	79.	96.	64.	71.			
EAST	0.	0.	0.	1.	103.	126.	112.	81.	40.	38.	32.	24.	12.	1.	0.	0.	0.	569.	101.	137.	73.	88.			
SOUTHEAST	0.	0.	0.	1.	119.	167.	177.	167.	142.	106.	64.	24.	12.	1.	0.	0.	0.	980.	132.	193.	86.	112.			
HORIZ.	0.	0.	0.	1.	39.	85.	123.	146.	154.	146.	123.	85.	39.	1.	0.	0.	0.	942.	130.	168.	85.	110.			
DAILY TOTAL RADIATION																		SAG/DAYTIME SATGS				SAG/ALL DAY SATGS			

MONTH	2	HO	2280.	TOD	59.	TOT	56.	HOURLY SOLAR RADIATION								KT	.568	KD					.178
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
																			SAT6S	SAT6D	SAT6S	SAT6D	
SOUTH	0.	0.	0.	24.	82.	125.	156.	176.	182.	176.	156.	125.	82.	24.	0.	0.	0.	1308.	150.	225.	98.	133.	
SOUTHWEST	0.	0.	0.	6.	19.	31.	58.	104.	143.	172.	187.	182.	151.	61.	0.	0.	0.	1115.	137.	200.	92.	121.	
WEST	0.	0.	0.	6.	19.	31.	40.	46.	48.	95.	131.	152.	144.	66.	0.	0.	0.	778.	113.	158.	81.	102.	
NORTHWEST	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	50.	63.	35.	0.	0.	0.	426.	89.	113.	70.	81.	
NORTH	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	31.	19.	6.	0.	0.	0.	334.	82.	101.	67.	76.	
NORTHEAST	0.	0.	0.	35.	63.	50.	40.	46.	48.	46.	40.	31.	19.	6.	0.	0.	0.	426.	89.	113.	70.	81.	
EAST	0.	0.	0.	66.	144.	152.	131.	95.	48.	46.	40.	31.	19.	6.	0.	0.	0.	778.	113.	158.	81.	102.	
SOUTHEAST	0.	0.	0.	61.	151.	182.	187.	172.	143.	104.	58.	31.	19.	6.	0.	0.	0.	1115.	137.	200.	92.	121.	
HORIZ.	0.	0.	0.	16.	69.	120.	160.	185.	194.	185.	160.	120.	69.	16.	0.	0.	0.	1296.	150.	223.	98.	132.	

MONTH	3	HO	2832.	TOD	62.	TOT	59.	KT	.602	KD	.174						
HOURLY SOLAR RADIATION																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	30.	74.	113.	144.	164.	171.	164.	144.	113.	74.	30.	0.	0.	0.
SOUTHWEST	0.	0.	0.	13.	26.	39.	48.	94.	137.	169.	187.	187.	165.	108.	0.	0.	0.
WEST	0.	0.	0.	13.	26.	39.	48.	54.	56.	107.	148.	174.	175.	130.	0.	0.	0.
NORTHWEST	0.	0.	0.	13.	26.	39.	48.	54.	56.	54.	51.	81.	98.	84.	0.	0.	0.
NORTH	0.	0.	0.	13.	26.	39.	48.	54.	56.	54.	48.	39.	26.	13.	0.	0.	0.
NORTHEAST	0.	0.	0.	84.	98.	81.	51.	54.	56.	54.	48.	39.	26.	13.	0.	0.	0.
EAST	0.	0.	0.	130.	175.	174.	148.	107.	56.	54.	48.	39.	26.	13.	0.	0.	0.
SOUTHEAST	0.	0.	0.	108.	165.	187.	187.	169.	137.	94.	48.	39.	26.	13.	0.	0.	0.
HORIZ.	0.	0.	0.	43.	104.	158.	200.	227.	236.	227.	200.	158.	104.	43.	0.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS SATGD																	
SAG/ALL DAY SATGS SATGSD																	
SOUTH	1221. 140. 204. 98. 130.																
SOUTHWEST	1174. 137. 198. 97. 127.																
WEST	970. 124. 175. 90. 115.																
NORTHWEST	603. 100. 132. 78. 94.																
NORTH	415. 88. 110. 72. 83.																
NORTHEAST	603. 100. 132. 78. 94.																
EAST	970. 124. 175. 90. 115.																
SOUTHEAST	1174. 137. 198. 97. 127.																
HORIZ.	1703. 171. 260. 114. 158.																

LOCATION LOS ANGELES, CALIF., WBO LATITUDE 34 DEGREES 3 MINUTES

MONTH	4	HO	3338.	TOT	64.	TOT	61.	KT	571	KD	.178						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	6.	19.	49.	82.	108.	125.	131.	125.	108.	82.	49.	19.	6.	0.	0.
SOUTHWEST	0.	0.	6.	19.	33.	44.	53.	72.	110.	139.	155.	157.	141.	104.	33.	0.	0.
WEST	0.	0.	6.	19.	33.	44.	53.	59.	61.	106.	142.	165.	169.	143.	53.	0.	0.
NORTHWEST	0.	0.	6.	19.	33.	44.	53.	59.	61.	59.	77.	103.	117.	110.	45.	0.	0.
NORTH	0.	0.	14.	23.	33.	44.	53.	59.	61.	59.	53.	44.	33.	23.	14.	0.	0.
NORTHEAST	0.	0.	45.	110.	117.	103.	77.	59.	61.	59.	53.	44.	33.	19.	6.	0.	0.
EAST	0.	0.	53.	143.	169.	165.	142.	106.	61.	59.	53.	44.	33.	19.	6.	0.	0.
SOUTHEAST	0.	0.	33.	104.	141.	157.	155.	139.	110.	72.	53.	44.	33.	19.	6.	0.	0.
HORIZ.	0.	0.	15.	68.	124.	174.	213.	237.	245.	237.	213.	174.	124.	68.	15.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SAT6S SAT6D																	
SAG/ALL DAY SAT6S SAT6D																	

MONTH	5	HO	3633.	TOD	68.	TOT	65.	KT	.573	KD	.178						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	10.	24.	36.	62.	86.	102.	107.	102.	86.	62.	36.	24.	10.	0.	0.
SOUTHWEST	0.	0.	10.	24.	36.	47.	56.	61.	64.	122.	137.	140.	127.	98.	49.	0.	0.
WEST	0.	0.	10.	24.	36.	47.	56.	61.	63.	106.	141.	163.	168.	149.	88.	0.	0.
NORTHWEST	0.	0.	10.	24.	36.	47.	56.	61.	63.	64.	94.	119.	132.	127.	82.	0.	0.
NORTH	0.	0.	34.	44.	40.	47.	56.	61.	63.	61.	56.	47.	40.	44.	34.	0.	0.
NORTHEAST	0.	0.	82.	127.	132.	119.	94.	64.	63.	61.	56.	47.	36.	24.	10.	0.	0.
EAST	0.	0.	88.	149.	168.	163.	141.	106.	63.	61.	56.	47.	36.	24.	10.	0.	0.
SOUTHEAST	0.	0.	49.	98.	127.	140.	137.	122.	94.	61.	56.	47.	36.	24.	10.	0.	0.
HORIZ.	0.	0.	31.	85.	139.	187.	224.	247.	255.	247.	224.	187.	139.	85.	31.	0.	0.

MONTH	6	HO	3733.	TOD	71.	TOT	68.	KT	.605	KD	.173						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	1.	12.	25.	37.	55.	79.	95.	101.	95.	79.	55.	37.	25.	12.	1.	0.
SOUTHWEST	0.	1.	12.	25.	37.	48.	57.	62.	90.	119.	137.	140.	128.	100.	54.	1.	0.
WEST	0.	1.	12.	25.	37.	48.	57.	62.	64.	110.	147.	172.	179.	161.	104.	1.	0.
NORTHWEST	0.	1.	12.	25.	37.	48.	57.	62.	64.	72.	105.	131.	147.	143.	100.	1.	0.
NORTH	0.	1.	45.	55.	50.	48.	57.	62.	64.	62.	57.	48.	50.	55.	45.	1.	0.
NORTHEAST	0.	1.	100.	143.	147.	131.	105.	72.	64.	62.	57.	48.	37.	25.	12.	1.	0.
EAST	0.	1.	104.	161.	179.	172.	147.	110.	64.	62.	57.	48.	37.	25.	12.	1.	0.
SOUTHEAST	0.	1.	54.	100.	128.	140.	137.	119.	90.	62.	57.	48.	37.	25.	12.	1.	0.
HORIZ.	0.	2.	39.	95.	152.	201.	240.	264.	272.	264.	240.	201.	152.	95.	39.	2.	0.
												</					

LOCATION LOS ANGELES, CALIF.\*WBO LATITUDE 34 DEGREES 3 MINUTES

MONTH 7 HO 3628. TOD 76. TOT 72. KT .660 KD .159

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	10.	23.	36.	65.	93.	112.	118.	112.	93.	65.	36.	23.	10.	0.	0.	797.	123.	159.
SOUTHWEST	0.	0.	10.	23.	36.	47.	55.	61.	102.	137.	159.	163.	150.	115.	56.	0.	0.	1114.	141.	192.
WEST	0.	0.	10.	23.	36.	47.	55.	61.	63.	118.	163.	194.	202.	180.	105.	0.	0.	1257.	150.	206.
NORTHWEST	0.	0.	10.	23.	36.	47.	55.	61.	63.	65.	105.	138.	157.	153.	98.	0.	0.	1010.	135.	181.
NORTH	0.	0.	39.	50.	41.	47.	55.	61.	63.	61.	55.	47.	41.	50.	39.	0.	0.	650.	114.	143.
NORTHEAST	0.	0.	98.	153.	157.	138.	105.	65.	63.	61.	55.	47.	36.	23.	10.	0.	0.	1010.	135.	181.
EAST	0.	0.	105.	180.	202.	194.	163.	118.	63.	61.	55.	47.	36.	23.	10.	0.	0.	1257.	150.	206.
SOUTHEAST	0.	0.	56.	115.	150.	163.	159.	137.	102.	61.	55.	47.	36.	23.	10.	0.	0.	1114.	141.	192.
HORIZ.	0.	0.	33.	96.	159.	215.	259.	286.	296.	286.	259.	215.	159.	96.	33.	0.	0.	2394.	217.	325.

MONTH 8 HO 3313. TOD 76. TOT 73. KT .648 KD .162

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	6.	19.	52.	90.	120.	140.	147.	140.	120.	90.	52.	19.	6.	0.	0.	1000.	139.	187.
SOUTHWEST	0.	0.	6.	19.	32.	44.	53.	75.	122.	157.	178.	181.	163.	119.	35.	0.	0.	1184.	150.	207.
WEST	0.	0.	6.	19.	32.	44.	53.	58.	60.	117.	163.	192.	198.	165.	56.	0.	0.	1162.	149.	205.
NORTHWEST	0.	0.	6.	19.	32.	44.	53.	58.	60.	58.	83.	116.	135.	126.	47.	0.	0.	838.	129.	169.
NORTH	0.	0.	14.	24.	32.	44.	53.	58.	60.	58.	53.	44.	32.	24.	14.	0.	0.	511.	108.	133.
NORTHEAST	0.	0.	47.	126.	135.	116.	83.	58.	60.	58.	53.	44.	32.	19.	6.	0.	0.	838.	129.	169.
EAST	0.	0.	56.	165.	198.	192.	163.	117.	60.	58.	53.	44.	32.	19.	6.	0.	0.	1162.	149.	205.
SOUTHEAST	0.	0.	35.	119.	163.	181.	178.	157.	122.	75.	53.	44.	32.	19.	6.	0.	0.	1184.	150.	207.
HORIZ.	0.	0.	14.	74.	139.	196.	241.	270.	279.	270.	241.	196.	139.	74.	14.	0.	0.	2147.	211.	314.

MONTH 9 HO 2815. TOD 74. TOT 71. KT .643 KD .163

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	30.	77.	120.	154.	175.	183.	175.	154.	120.	77.	30.	0.	0.	0.	1294.	162.	230.
SOUTHWEST	0.	0.	0.	12.	26.	38.	47.	98.	145.	182.	202.	202.	177.	112.	0.	0.	0.	1241.	159.	223.
WEST	0.	0.	0.	12.	26.	38.	47.	53.	55.	113.	159.	188.	188.	136.	0.	0.	0.	1017.	143.	195.
NORTHWEST	0.	0.	0.	12.	26.	38.	47.	53.	55.	53.	51.	86.	105.	87.	0.	0.	0.	615.	116.	148.
NORTH	0.	0.	0.	12.	26.	38.	47.	53.	55.	53.	47.	38.	26.	12.	0.	0.	0.	410.	102.	123.
NORTHEAST	0.	0.	0.	87.	105.	86.	51.	53.	55.	53.	47.	38.	26.	12.	0.	0.	0.	615.	116.	148.
EAST	0.	0.	0.	136.	188.	188.	159.	113.	55.	53.	47.	38.	26.	12.	0.	0.	0.	1017.	143.	196.
SOUTHEAST	0.	0.	0.	112.	177.	202.	202.	182.	145.	98.	47.	38.	26.	12.	0.	0.	0.	1241.	159.	223.
HORIZ.	0.	0.	0.	44.	109.	168.	214.	243.	253.	243.	214.	168.	109.	44.	0.	0.	0.	1809.	197.	292.

LOCATION LOS ANGELES, CALIF., WBO LATITUDE 34 DEGREES 3 MINUTES

MONTH 10 HO 2245. TOD 79. TOT 67. KT .578 KD .177

ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	22.	81.	126.	160.	180.	187.	180.	160.	126.	81.	22.	0.	0.	0.	1326.	162.	238.	109.	144.
SOUTHWEST	0.	0.	0.	6.	19.	31.	59.	106.	146.	176.	190.	185.	151.	54.	0.	0.	0.	1121.	148.	212.	103.	132.
WEST	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	33.	153.	57.	0.	0.	0.	770.	123.	167.	91.	111.
NORTHWEST	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	49.	62.	31.	0.	0.	0.	417.	99.	122.	80.	91.
NORTH	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	31.	19.	6.	0.	0.	0.	329.	93.	111.	77.	86.
NORTHEAST	0.	0.	0.	31.	52.	49.	40.	46.	48.	46.	40.	31.	19.	6.	0.	0.	0.	417.	99.	122.	80.	91.
EAST	0.	0.	0.	57.	143.	153.	133.	95.	48.	46.	40.	31.	19.	6.	0.	0.	0.	770.	123.	167.	91.	111.
SOUTHEAST	0.	0.	0.	54.	151.	185.	190.	176.	146.	106.	59.	31.	19.	6.	0.	0.	0.	1121.	148.	212.	103.	132.
HORIZ.	0.	0.	0.	14.	68.	120.	161.	187.	196.	187.	161.	120.	68.	14.	0.	0.	0.	1298.	160.	234.	108.	142.

MONTH 11 HO 1741. TOD 65. TOT 62. KT .548 KD .181

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SAT6S	SAT6D	SAT6S	SAT6D
SOUTH	0.	0.	0.	1.	73.	126.	161.	182.	189.	182.	161.	126.	73.	1.	0.	0.	0.	1276.	163.	242.	103.	136.
SOUTHWEST	0.	0.	0.	1.	12.	23.	65.	109.	145.	171.	182.	170.	120.	1.	0.	0.	0.	998.	141.	204.	94.	120.
WEST	0.	0.	0.	1.	12.	23.	32.	38.	40.	82.	114.	128.	103.	1.	0.	0.	0.	574.	109.	145.	41.	96.
NORTHWEST	0.	0.	0.	1.	12.	23.	32.	38.	40.	38.	32.	24.	33.	1.	0.	0.	0.	274.	86.	103.	71.	78.
NORTH	0.	0.	0.	1.	12.	23.	32.	38.	40.	38.	32.	23.	12.	1.	0.	0.	0.	252.	77.	100.	70.	77.
NORTHEAST	0.	0.	0.	1.	33.	24.	32.	38.	40.	38.	32.	23.	12.	1.	0.	0.	0.	274.	86.	103.	71.	78.
EAST	0.	0.	0.	1.	103.	128.	114.	82.	40.	38.	32.	23.	12.	1.	0.	0.	0.	574.	109.	145.	41.	96.
SOUTHEAST	0.	0.	0.	1.	120.	170.	182.	171.	145.	109.	65.	23.	12.	1.	0.	0.	0.	998.	141.	204.	94.	120.
HORIZ.	0.	0.	0.	1.	39.	86.	124.	148.	157.	148.	124.	86.	39.	1.	0.	0.	0.	953.	138.	197.	83.	118.

MONTH 12 HO 1545. TOD 60. TOT 57. KT .566 KD .179

ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SAT6d	SAT6d	SAT6d	SAT6d
SOUTH	0.	0.	0.	0.	70.	133.	172.	195.	203.	195.	172.	133.	70.	0.	0.	0.	0.	1345.	167.	254.	100.	136.
SOUTHWEST	0.	0.	0.	0.	9.	26.	71.	116.	154.	181.	190.	175.	111.	0.	0.	0.	0.	1032.	142.	209.	90.	117.
WEST	0.	0.	0.	0.	9.	21.	29.	35.	37.	81.	114.	126.	92.	0.	0.	0.	0.	544.	103.	138.	75.	89.
NORTHWEST	0.	0.	0.	0.	9.	21.	29.	35.	37.	35.	29.	21.	25.	0.	0.	0.	0.	241.	79.	95.	65.	71.
NORTH	0.	0.	0.	0.	9.	21.	29.	35.	37.	35.	29.	21.	9.	0.	0.	0.	0.	225.	78.	93.	65.	70.
NORTHEAST	0.	0.	0.	0.	25.	21.	29.	35.	37.	35.	29.	21.	9.	0.	0.	0.	0.	241.	79.	95.	65.	71.
EAST	0.	0.	0.	0.	82.	126.	114.	81.	37.	35.	29.	21.	9.	0.	0.	0.	0.	544.	103.	138.	75.	89.
SOUTHEAST	0.	0.	0.	0.	111.	175.	190.	181.	154.	116.	71.	26.	9.	0.	0.	0.	0.	1032.	142.	209.	90.	117.
HORIZ.	0.	0.	0.	0.	29.	77.	116.	141.	149.	141.	116.	77.	29.	0.	0.	0.	0.	875.	129.	186.	85.	108.



ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	153.	150.	140.	118.	112.	112.	123.	139.	162.	162.	163.	167.	142.
SOUTHWEST	132.	137.	137.	127.	127.	129.	141.	150.	159.	148.	141.	142.	139.
WEST	101.	113.	124.	126.	133.	139.	150.	149.	143.	123.	109.	103.	126.
NORTHWEST	79.	89.	100.	110.	122.	128.	135.	129.	116.	99.	86.	79.	106.
NORTH	77.	82.	88.	94.	105.	111.	114.	108.	102.	93.	85.	78.	95.
NORTHEAST	79.	89.	100.	110.	122.	128.	135.	129.	116.	99.	86.	79.	106.
EAST	101.	113.	124.	126.	133.	139.	150.	149.	143.	123.	109.	103.	126.
SOUTHEAST	132.	137.	137.	127.	127.	129.	141.	150.	159.	148.	141.	142.	139.
HORIZ.	130.	150.	171.	176.	190.	201.	217.	211.	197.	160.	138.	129.	172.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	230.	225.	204.	162.	145.	143.	159.	187.	230.	238.	242.	254.	201.
SOUTHWEST	193.	200.	198.	178.	172.	173.	192.	207.	223.	212.	204.	209.	197.
WEST	137.	158.	175.	177.	183.	191.	206.	205.	196.	167.	145.	138.	173.
NORTHWEST	96.	113.	132.	148.	163.	173.	181.	169.	148.	122.	103.	95.	137.
NORTH	93.	101.	110.	119.	133.	142.	143.	133.	123.	111.	100.	93.	117.
NORTHEAST	96.	113.	132.	148.	163.	173.	181.	169.	148.	122.	103.	95.	137.
EAST	137.	158.	175.	177.	183.	191.	206.	205.	196.	167.	145.	138.	173.
SOUTHEAST	193.	200.	198.	178.	172.	173.	192.	207.	223.	212.	204.	209.	197.
HORIZ.	188.	223.	260.	268.	284.	300.	325.	314.	292.	234.	197.	186.	256.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	95.	98.	98.	91.	90.	92.	100.	107.	115.	109.	103.	100.	100.
SOUTHWEST	86.	92.	97.	96.	99.	102.	111.	113.	113.	103.	94.	90.	100.
WEST	73.	81.	90.	95.	103.	108.	115.	113.	106.	91.	81.	75.	94.
NORTHWEST	64.	70.	78.	87.	96.	102.	107.	102.	92.	80.	71.	65.	84.
NORTH	63.	69.	72.	78.	86.	92.	95.	90.	85.	77.	70.	65.	78.
NORTHEAST	64.	70.	78.	87.	96.	102.	107.	102.	92.	80.	71.	65.	84.
EAST	73.	81.	90.	95.	103.	108.	115.	113.	106.	91.	81.	75.	94.
SOUTHEAST	86.	92.	97.	102.	111.	113.	113.	113.	113.	103.	94.	90.	100.
HORIZ.	85.	98.	114.	123.	136.	145.	154.	146.	133.	108.	93.	85.	118.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	128.	133.	130.	115.	110.	111.	121.	133.	149.	144.	136.	136.	129.
SOUTHWEST	112.	121.	127.	124.	125.	129.	140.	144.	146.	132.	120.	117.	128.
WEST	88.	102.	115.	123.	132.	139.	148.	143.	132.	111.	96.	89.	118.
NORTHWEST	71.	81.	94.	107.	120.	128.	134.	120.	108.	91.	78.	71.	101.
NORTH	70.	76.	83.	91.	103.	110.	112.	104.	96.	86.	77.	70.	90.
NORTHEAST	71.	81.	94.	107.	120.	128.	134.	124.	108.	91.	78.	71.	101.
EAST	88.	102.	115.	123.	132.	139.	148.	144.	132.	111.	96.	89.	118.
SOUTHEAST	112.	121.	127.	124.	125.	129.	140.	144.	146.	132.	120.	117.	128.
HORIZ.	110.	132.	158.	173.	191.	204.	217.	203.	180.	142.	118.	108.	161.

LOCATION		MADISON, WISCONSIN		LATITUDE 43 DEGREES				7 MINUTES									
MONTH 1	HO 1257.	TOD	22.	TOT	19.	KT	.490	KD	.187	DAILY TOTAL RADIATION	SAG/DAYTIME SAT6S	SAG/ALL DAY SAT6S					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	40.	101.	139.	161.	169.	161.	139.	101.	40.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	6.	19.	58.	96.	128.	149.	153.	133.	64.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	6.	16.	24.	29.	30.	66.	91.	97.	55.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	6.	16.	24.	29.	30.	29.	24.	16.	17.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	6.	16.	24.	29.	30.	29.	24.	16.	6.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	17.	16.	24.	29.	30.	29.	24.	16.	6.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	55.	97.	91.	66.	30.	29.	24.	16.	6.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	64.	133.	153.	149.	128.	96.	58.	19.	6.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	16.	52.	83.	103.	109.	103.	83.	52.	16.	0.	0.	0.	0.
															</		

LOCATION		MADISON, WISCONSIN		LATITUDE		43 DEGREES		7 MINUTES										
MONTH	4	HO	3169.	TOD	40.	TOT	46.	KT	474	KD					.197			
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH		0.	0.	8.	21.	52.	81.	105.	120.	125.	120.	105.	81.	52.	21.	8.	0.	0.
SOUTHWEST		0.	0.	8.	19.	30.	40.	47.	75.	104.	124.	134.	132.	117.	86.	35.	0.	0.
WEST		0.	0.	8.	19.	30.	40.	47.	52.	54.	87.	113.	129.	131.	112.	54.	0.	0.
NORTHWEST		0.	0.	8.	19.	30.	40.	47.	52.	54.	52.	53.	74.	86.	83.	46.	0.	0.
NORTH		0.	0.	15.	19.	30.	40.	47.	52.	54.	52.	47.	40.	30.	19.	15.	0.	0.
NORTHEAST		0.	0.	46.	83.	96.	74.	53.	52.	54.	52.	47.	40.	30.	19.	8.	0.	0.
EAST		0.	0.	54.	112.	131.	129.	113.	87.	54.	52.	47.	40.	30.	19.	8.	0.	0.
SOUTHEAST		0.	0.	35.	86.	117.	132.	134.	124.	104.	75.	47.	40.	30.	19.	8.	0.	0.
HORIZ.		0.	0.	18.	59.	100.	136.	164.	181.	188.	181.	164.	136.	100.	59.	18.	0.	0.
DAILY TOTAL RADIATION																		
SAG/DAYTIME SATGS																		
SAG/ALL DAY SATGD																		
SOUTH																		
SOUTHWEST																		
WEST																		
NORTHWEST																		
NORTH																		
NORTHEAST																		
EAST																		
SOUTHEAST																		
HORIZ.																		
MONTH 5		HO	3605.	TOD	61.	TOT	57.	KT	493	KD					.188			
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH		0.	3.	13.	25.	44.	72.	95.	109.	114.	109.	95.	72.	44.	25.	13.	3.	0.
SOUTHWEST		0.	3.	13.	25.	35.	45.	52.	69.	98.	118.	129.	128.	115.	89.	51.	5.	0.
WEST		0.	3.	13.	25.	35.	45.	52.	56.	58.	91.	118.	135.	139.	126.	87.	9.	0.
NORTHWEST		0.	3.	13.	25.	35.	45.	52.	56.	58.	56.	68.	89.	103.	103.	79.	9.	0.
NORTH		0.	6.	33.	34.	35.	45.	52.	56.	58.	56.	52.	45.	35.	34.	33.	6.	0.
NORTHEAST		0.	9.	79.	103.	103.	89.	68.	56.	58.	56.	52.	45.	35.	25.	13.	3.	0.
EAST		0.	9.	87.	126.	139.	135.	118.	91.	58.	56.	52.	45.	35.	25.	13.	3.	0.
SOUTHEAST		0.	5.	51.	89.	115.	128.	129.	118.	98.	69.	52.	45.	35.	25.	13.	3.	0.
HORIZ.		0.	5.	38.	79.	121.	156.	184.	202.	208.	202.	184.	156.	121.	79.	38.	5.	0.
DAILY TOTAL RADIATION																		
SAG/DAYTIME SATGS																		
SAG/ALL DAY SATGD																		
SOUTH																		
SOUTHWEST																		
WEST																		
NORTHWEST																		
NORTH																		
NORTHEAST																		
EAST																		
SOUTHEAST																		
HORIZ.																		
MONTH 6		HO	3765.	TOD	71.	TOT	67.	KT	540	KD					.182			
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH		0.	5.	15.	27.	41.	71.	96.	111.	117.	111.	96.	71.	41.	27.	15.	5.	0.
SOUTHWEST		0.	5.	15.	27.	37.	47.	54.	68.	100.	124.	137.	137.	124.	98.	59.	13.	0.
WEST		0.	5.	15.	27.	37.	47.	54.	58.	60.	98.	130.	150.	157.	144.	106.	28.	0.
NORTHWEST		0.	5.	15.	27.	37.	47.	54.	58.	60.	58.	78.	103.	119.	122.	100.	30.	0.
NORTH		0.	17.	44.	44.	37.	47.	54.	58.	60.	58.	54.	47.	37.	44.	44.	17.	0.
NORTHEAST		0.	30.	100.	122.	119.	103.	78.	58.	60.	58.	54.	47.	37.	27.	15.	5.	0.
EAST		0.	28.	106.	144.	157.	150.	130.	98.	60.	58.	54.	47.	37.	27.	15.	5.	0.
SOUTHEAST		0.	13.	59.	98.	124.	137.	137.	124.	100.	68.	54.	47.	37.	27.	15.	5.	0.
HORIZ.		0.	10.	48.	94.	138.	177.	207.	226.	233.	226.	207.	177.	138.	94.	48.	10.	0.
DAILY TOTAL RADIATION																		
SAG/DAYTIME SATGS																		
SAG/ALL DAY SATGD																		
SOUTH																		
SOUTHWEST																		
WEST																		
NORTHWEST																		
NORTH																		
NORTHEAST																		
EAST																		
SOUTHEAST																		
HORIZ.																		

LOCATION	MADISON, WISCONSIN				LATITUDE 43 DEGREES				7 MINUTES																								
MONTH	7	H0	3604.	T00	77.	TOT	73.	KT	HOURLY SOLAR RADIATION										.550		KD		.180		DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20																
SOUTH	0.	3.	13.	25.	46.	79.	106.	124.	129.	123.	106.	79.	46.	25.	13.	3.	0.									918. 128. 167. 104. 128.							
SOUTHWEST	0.	3.	13.	25.	46.	53.	74.	108.	134.	148.	148.	148.	134.	104.	59.	6.	0.									138. 184. 110. 139.							
WEST	0.	3.	13.	25.	46.	53.	58.	59.	101.	135.	158.	164.	164.	149.	102.	10.	0.									139. 186. 111. 140.							
NORTHWEST	0.	3.	13.	25.	46.	53.	58.	59.	58.	74.	101.	119.	121.	121.	103.	10.	0.									125. 162. 103. 125.							
NORTH	0.	6.	37.	37.	46.	53.	58.	59.	58.	53.	46.	36.	36.	37.	36.	6.	0.									111. 136. 94. 110.							
NORTHEAST	0.	10.	93.	121.	119.	101.	74.	59.	59.	58.	53.	46.	36.	25.	13.	3.	0.									125. 162. 103. 125.							
EAST	0.	10.	102.	149.	164.	158.	135.	101.	59.	58.	53.	46.	36.	25.	13.	3.	0.									139. 186. 111. 140.							
SOUTHEAST	0.	6.	59.	104.	134.	148.	148.	134.	108.	73.	53.	46.	36.	25.	13.	3.	0.									138. 184. 110. 139.							
HORIZ.	0.	5.	41.	89.	136.	178.	210.	230.	237.	230.	210.	178.	136.	89.	41.	5.	0.									189. 275. 142. 195.							
MONTH	8	H0	3147.	T00	74.	TOT	71.	KT				.534				KD		.183															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20									DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY			
SOUTH	0.	0.	8.	22.	57.	91.	118.	136.	142.	136.	118.	91.	57.	22.	8.	0.	0.									1004. 135. 182. 105. 131.							
SOUTHWEST	0.	0.	8.	19.	31.	41.	49.	42.	117.	142.	154.	152.	134.	98.	38.	0.	0.									1064. 139. 188. 107. 135.							
WEST	0.	0.	8.	19.	31.	41.	49.	53.	55.	96.	128.	149.	151.	128.	58.	0.	0.									966. 133. 178. 104. 129.							
NORTHWEST	0.	0.	8.	19.	31.	41.	49.	53.	55.	53.	56.	82.	98.	95.	0.	0.	0.									688. 116. 148. 94. 112.							
NORTH	0.	0.	15.	19.	31.	41.	49.	53.	55.	53.	49.	41.	31.	19.	15.	0.	0.									472. 103. 125. 87. 99.							
NORTHEAST	0.	0.	49.	95.	98.	82.	56.	53.	55.	53.	49.	41.	31.	19.	8.	0.	0.									688. 116. 148. 94. 112.							
EAST	0.	0.	58.	128.	151.	149.	128.	96.	55.	53.	49.	41.	31.	19.	8.	0.	0.									966. 133. 178. 104. 129.							
SOUTHEAST	0.	0.	38.	98.	134.	152.	154.	142.	117.	82.	49.	41.	31.	19.	8.	0.	0.									1064. 139. 188. 107. 135.							
HORIZ.	0.	0.	19.	64.	111.	152.	184.	205.	212.	205.	184.	152.	111.	64.	19.	0.	0.									1681. 176. 254. 128. 172.							
MONTH	9	H0	2490.	T00	66.	TOT	62. <th colspan="4">KT</th> <th colspan="4">.549</th> <th colspan="2">KD</th> <th colspan="2">.181</th> <th colspan="4"></th> <th colspan="4"></th>	KT				.549				KD		.181															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20									DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY			
SOUTH	0.	0.	0.	27.	70.	111.	142.	153.	169.	163.	142.	111.	70.	27.	0.	0.	0.									1195. 147. 209. 103. 134.							
SOUTHWEST	0.	0.	0.	11.	23.	34.	52.	96.	134.	161.	174.	169.	143.	85.	0.	0.	0.									1083. 139. 196. 99. 128.							
WEST	0.	0.	0.	11.	23.	34.	42.	47.	48.	93.	128.	148.	146.	100.	0.	0.	0.									820. 121. 164. 90. 112.							
NORTHWEST	0.	0.	0.	11.	23.	34.	42.	47.	48.	47.	42.	60.	76.	63.	0.	0.	0.									493. 99. 125. 79. 92.							
NORTH	0.	0.	0.	11.	23.	34.	42.	47.	48.	47.	42.	34.	23.	11.	0.	0.	0.									361. 90. 109. 74. 84.							
NORTHEAST	0.	0.	0.	63.	76.	60.	42.	47.	48.	47.	42.	34.	23.	11.	0.	0.	0.									493. 99. 125. 79. 92.							
EAST	0.	0.	0.	100.	146.	148.	128.	93.	48.	47.	42.	34.	23.	11.	0.	0.	0.									820. 121. 164. 90. 112.							
SOUTHEAST	0.	0.	0.	85.	143.	169.	174.	161.	134.	96.	52.	34.	23.	11.	0.	0.	0.									1083. 139. 196. 99. 128.							
HORIZ.	0.	0.	1.	34.	82.	127.	161.	183.	191.	183.	161.	127.	82.	34.	1.	0.	0.									1366. 158. 230. 109. 145.							



[illegible]

LOCATION MADISON, WISCONSIN LATITUDE 43 DEGREES 7 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	108.	101.	108.	100.	108.	117.	128.	135.	147.	136.	102.	107.	116.
SOUTHWEST	88.	87.	101.	103.	116.	127.	138.	130.	139.	121.	87.	87.	111.
WEST	56.	65.	86.	99.	116.	131.	139.	133.	121.	95.	65.	54.	97.
NORTHWEST	37.	46.	66.	86.	105.	120.	125.	116.	99.	76.	52.	38.	81.
NORTH	37.	43.	58.	75.	93.	107.	111.	103.	90.	73.	51.	38.	73.
NORTHEAST	37.	46.	66.	86.	105.	120.	125.	116.	99.	76.	52.	38.	81.
EAST	56.	65.	86.	99.	116.	131.	139.	133.	121.	95.	65.	54.	97.
SOUTHEAST	88.	87.	101.	103.	116.	127.	138.	130.	139.	121.	87.	87.	111.
HORIZ.	73.	88.	119.	135.	160.	181.	189.	176.	158.	120.	79.	68.	129.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	179.	163.	167.	142.	144.	152.	167.	182.	209.	204.	154.	174.	170.
SOUTHWEST	142.	138.	155.	148.	157.	171.	184.	188.	196.	175.	128.	138.	160.
WEST	84.	97.	127.	139.	159.	177.	186.	178.	164.	129.	86.	77.	134.
NORTHWEST	50.	64.	92.	115.	139.	158.	162.	148.	125.	94.	63.	49.	105.
NORTH	49.	59.	77.	97.	118.	134.	136.	125.	109.	88.	62.	49.	92.
NORTHEAST	50.	64.	92.	115.	139.	158.	162.	148.	125.	94.	63.	49.	105.
EAST	84.	97.	127.	139.	159.	177.	186.	178.	164.	129.	86.	77.	134.
SOUTHEAST	142.	138.	155.	148.	157.	171.	184.	188.	196.	175.	128.	138.	160.
HORIZ.	114.	140.	187.	204.	236.	265.	275.	254.	230.	175.	112.	103.	191.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	53.	56.	69.	75.	86.	96.	104.	105.	103.	87.	60.	53.	79.
SOUTHWEST	45.	50.	66.	76.	91.	103.	110.	107.	99.	80.	55.	46.	77.
WEST	32.	40.	58.	74.	91.	106.	111.	104.	90.	69.	46.	33.	71.
NORTHWEST	25.	32.	48.	66.	85.	99.	103.	94.	79.	60.	41.	28.	63.
NORTH	25.	30.	44.	60.	77.	90.	94.	87.	74.	59.	41.	28.	59.
NORTHEAST	25.	32.	48.	66.	85.	99.	103.	94.	79.	60.	41.	28.	63.
EAST	32.	40.	58.	74.	91.	106.	111.	104.	90.	69.	46.	33.	71.
SOUTHEAST	45.	50.	66.	76.	91.	103.	110.	107.	99.	80.	55.	46.	77.
HORIZ.	39.	50.	74.	94.	118.	137.	142.	128.	109.	80.	51.	39.	88.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	80.	84.	99.	98.	108.	119.	128.	131.	134.	117.	80.	77.	105.
SOUTHWEST	66.	72.	93.	101.	116.	131.	139.	135.	128.	104.	70.	64.	102.
WEST	43.	50.	79.	97.	117.	135.	140.	129.	112.	84.	54.	42.	90.
NORTHWEST	30.	37.	53.	73.	93.	107.	110.	112.	92.	68.	45.	32.	76.
NORTH	30.	37.	53.	73.	93.	107.	110.	99.	84.	66.	45.	32.	69.
NORTHEAST	30.	40.	61.	83.	106.	123.	125.	112.	92.	68.	45.	32.	76.
EAST	43.	54.	79.	97.	117.	135.	140.	129.	112.	84.	54.	42.	90.
SOUTHEAST	66.	72.	93.	101.	116.	131.	139.	135.	128.	104.	70.	64.	102.
HORIZ.	55.	73.	108.	133.	165.	190.	195.	172.	145.	104.	64.	51.	121.

LOCATION	MATANUSKA, ALASKA										LATITUDE 61 DEGREES 30 MINUTES											
MONTH	1	H0 291.		T00 14.		T0T 13.		KT .513		KD .186.												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				
SOUTH	0.	0.	0.	0.	0.	1.	97.	177.	203.	177.	97.	1.	0.	0.	0.	0.	0.	753.	104.	177.	37.	57.
SOUTHWEST	0.	0.	0.	0.	0.	1.	35.	98.	147.	158.	104.	1.	0.	0.	0.	0.	0.	544.	79.	132.	30.	45.
WEST	0.	0.	0.	0.	0.	1.	6.	9.	11.	52.	54.	1.	0.	0.	0.	0.	0.	134.	30.	43.	17.	21.
NORTHWEST	0.	0.	0.	0.	0.	1.	6.	9.	11.	9.	6.	1.	0.	0.	0.	0.	0.	42.	19.	23.	14.	15.
NORTH	0.	0.	0.	0.	0.	1.	6.	9.	11.	9.	6.	1.	0.	0.	0.	0.	0.	42.	19.	23.	14.	15.
NORTHEAST	0.	0.	0.	0.	0.	1.	6.	9.	11.	9.	6.	1.	0.	0.	0.	0.	0.	42.	19.	23.	14.	15.
EAST	0.	0.	0.	0.	0.	1.	54.	52.	11.	9.	6.	1.	0.	0.	0.	0.	0.	134.	30.	43.	17.	21.
SOUTHEAST	0.	0.	0.	0.	0.	1.	104.	158.	147.	98.	35.	1.	0.	0.	0.	0.	0.	544.	79.	132.	30.	45.
HORIZ.	0.	0.	0.	0.	0.	2.	17.	35.	42.	35.	17.	2.	0.	0.	0.	0.	0.	149.	32.	46.	18.	22.
MONTH	2	H0 848.		T00 21.		T0T 19.		KT .503		KD .188												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				
SOUTH	0.	0.	0.	0.	0.	24.	91.	141.	170.	170.	141.	91.	24.	0.	0.	0.	0.	1034.	106.	176.	52.	79.
SOUTHWEST	0.	0.	0.	0.	0.	4.	11.	52.	97.	134.	156.	125.	42.	0.	0.	0.	0.	776.	85.	137.	44.	64.
WEST	0.	0.	0.	0.	0.	4.	11.	16.	20.	21.	61.	89.	91.	37.	0.	0.	0.	351.	50.	74.	30.	39.
NORTHWEST	0.	0.	0.	0.	0.	4.	11.	16.	20.	21.	20.	16.	11.	13.	0.	0.	0.	132.	32.	41.	23.	26.
NORTH	0.	0.	0.	0.	0.	4.	11.	16.	20.	21.	20.	16.	11.	4.	0.	0.	0.	122.	31.	39.	23.	26.
NORTHEAST	0.	0.	0.	0.	0.	13.	11.	16.	20.	21.	20.	16.	11.	4.	0.	0.	0.	132.	32.	41.	23.	26.
EAST	0.	0.	0.	0.	0.	37.	91.	89.	61.	21.	20.	16.	11.	4.	0.	0.	0.	351.	50.	74.	30.	39.
SOUTHEAST	0.	0.	0.	0.	0.	42.	125.	156.	134.	97.	52.	11.	4.	0.	0.	0.	0.	776.	85.	137.	44.	64.
HORIZ.	0.	0.	0.	0.	0.	9.	34.	58.	73.	78.	73.	58.	34.	9.	0.	0.	0.	427.	56.	85.	32.	43.
MONTH	3	H0 1648.		T00 27.		T0T 25.		KT .000		KD .179												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				
SOUTH	0.	0.	0.	0.	6.	12.	16.	20.	22.	23.	22.	20.	16.	12.	6.	0.	0.	176.	39.	48.	30.	35.
SOUTHWEST	0.	0.	0.	0.	6.	12.	16.	20.	22.	23.	22.	20.	16.	12.	6.	0.	0.	176.	39.	48.	30.	35.
WEST	0.	0.	0.	0.	6.	12.	16.	20.	22.	23.	22.	20.	16.	12.	6.	0.	0.	176.	39.	48.	30.	35.
NORTHWEST	0.	0.	0.	0.	6.	12.	16.	20.	22.	23.	22.	20.	16.	12.	6.	0.	0.	176.	39.	48.	30.	35.
NORTH	0.	0.	0.	0.	6.	12.	16.	20.	22.	23.	22.	20.	16.	12.	6.	0.	0.	176.	39.	48.	30.	35.
NORTHEAST	0.	0.	0.	0.	6.	12.	16.	20.	22.	23.	22.	20.	16.	12.	6.	0.	0.	176.	39.	48.	30.	35.
EAST	0.	0.	0.	0.	6.	12.	16.	20.	22.	23.	22.	20.	16.	12.	6.	0.	0.	176.	39.	48.	30.	35.
SOUTHEAST	0.	0.	0.	0.	6.	12.	16.	20.	22.	23.	22.	20.	16.	12.	6.	0.	0.	176.	39.	48.	30.	35.
SORIZ.	0.	0.	0.	0.	10.	19.	27.	33.	37.	38.	37.	33.	27.	19.	10.	0.	0.	294.	46.	61.	34.	42.

LOCATION	MATANUSKA, ALASKA				LATITUDE 61 DEGREES				30 MINUTES									
MONTH	4	H0	2629.	T00	30.	T0T	35.	KT	HOURLY SOLAR RADIATION				.545	KD	.182			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SOUTH	0.	3.	10.	34.	77.	118.	150.	171.	179.	171.	150.	118.	77.	34.	10.	3.	0.	
SOUTHWEST	0.	3.	10.	18.	26.	33.	57.	102.	139.	165.	178.	174.	154.	117.	65.	8.	0.	
WEST	0.	3.	10.	18.	26.	33.	38.	41.	42.	46.	123.	148.	156.	142.	96.	15.	0.	
NORTHWEST	0.	3.	10.	18.	26.	33.	38.	41.	42.	41.	38.	54.	82.	94.	77.	14.	0.	
NORTH	0.	7.	19.	18.	26.	33.	38.	41.	42.	41.	38.	33.	26.	18.	19.	7.	0.	
NORTHEAST	0.	14.	77.	94.	82.	54.	38.	41.	42.	41.	38.	33.	26.	18.	10.	3.	0.	
EAST	0.	15.	96.	142.	156.	148.	123.	86.	42.	41.	38.	33.	26.	18.	10.	3.	0.	
SOUTHEAST	0.	8.	65.	117.	154.	174.	178.	165.	139.	102.	57.	33.	26.	18.	10.	3.	0.	
HORIZ.	0.	6.	30.	63.	97.	126.	148.	163.	148.	163.	148.	126.	97.	63.	30.	6.	0.	
MONTH	5	H0	3393.	T00	50.	T0T	46.	KT	HOURLY SOLAR RADIATION				.494	KD	.188			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SOUTH	4.	10.	18.	31.	66.	98.	124.	140.	146.	140.	124.	98.	66.	31.	18.	10.	4.	
SOUTHWEST	4.	10.	18.	25.	33.	39.	52.	87.	117.	138.	148.	147.	133.	107.	73.	36.	7.	
WEST	4.	10.	18.	25.	33.	39.	44.	47.	48.	43.	112.	132.	141.	135.	113.	72.	18.	
NORTHWEST	4.	10.	18.	25.	33.	39.	44.	47.	48.	47.	44.	63.	86.	99.	97.	72.	20.	
NORTH	14.	36.	35.	25.	33.	39.	44.	47.	48.	47.	44.	39.	33.	25.	35.	36.	14.	
NORTHEAST	20.	72.	97.	99.	86.	63.	44.	47.	48.	47.	44.	39.	33.	25.	18.	10.	4.	
EAST	18.	72.	113.	135.	141.	132.	112.	83.	48.	47.	44.	39.	33.	25.	18.	10.	4.	
SOUTHEAST	7.	36.	73.	107.	133.	147.	148.	138.	117.	87.	52.	39.	33.	25.	18.	10.	4.	
HORIZ.	8.	28.	55.	85.	113.	138.	157.	169.	173.	169.	157.	138.	113.	85.	55.	28.	8.	
DAILY TOTAL RADIATION																		



LOCATION	MATANUSKA, ALASKA				LATITUDE		61 DEGREES		30 MINUTES		LATITUDE		61 DEGREES		30 MINUTES		LATITUDE		61 DEGREES		30 MINUTES	
MONTH	7	H0	3402.	T00	60.	T01	57.	KT	.434	KD	.185	HOURLY SOLAR RADIATION		DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGD				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	4.	10.	17.	29.	57.	84.	106.	120.	125.	120.	106.	84.	57.	29.	17.	10.	4.	980.	105.	140.	91.	117.
SOUTHWEST	4.	10.	17.	24.	31.	37.	48.	77.	101.	118.	126.	124.	112.	90.	61.	30.	6.	1018.	107.	143.	92.	119.
WEST	4.	10.	17.	24.	31.	37.	41.	44.	45.	73.	97.	113.	119.	113.	93.	59.	15.	935.	103.	136.	89.	114.
NORTHWEST	4.	10.	17.	24.	31.	37.	41.	44.	45.	44.	41.	57.	74.	84.	81.	59.	17.	710.	93.	118.	82.	100.
NORTH	12.	31.	31.	24.	31.	37.	41.	44.	45.	44.	41.	37.	31.	24.	31.	31.	12.	545.	85.	105.	76.	90.
NORTHEAST	17.	59.	81.	84.	74.	57.	41.	44.	45.	44.	41.	37.	31.	24.	17.	10.	4.	710.	93.	118.	82.	100.
EAST	15.	59.	93.	113.	119.	113.	97.	73.	45.	44.	41.	37.	31.	24.	17.	10.	4.	935.	103.	136.	89.	114.
SOUTHEAST	6.	30.	61.	90.	112.	124.	126.	118.	101.	77.	48.	37.	31.	24.	17.	10.	4.	1018.	107.	143.	92.	119.
HORIZ.	8.	25.	49.	75.	99.	121.	137.	148.	151.	148.	137.	121.	99.	75.	49.	25.	8.	1476.	128.	180.	108.	146.

MONTH	8	H0	2615.	T00	58.	T0T	56.	KT	.410	KD	.184											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	3.	10.	27.	56.	84.	107.	122.	127.	122.	107.	84.	56.	27.	10.	3.	0.	945.	110.	149.	88.	113.
SOUTHWEST	0.	3.	10.	17.	24.	30.	47.	76.	101.	118.	125.	121.	105.	79.	43.	6.	0.	903.	107.	145.	86.	110.
WEST	0.	3.	10.	17.	24.	30.	35.	38.	39.	67.	90.	104.	107.	94.	61.	9.	0.	726.	98.	128.	80.	99.
NORTHWEST	0.	3.	10.	17.	24.	30.	35.	38.	39.	38.	35.	44.	60.	64.	50.	9.	0.	494.	85.	106.	72.	85.
NORTH	0.	5.	15.	17.	24.	30.	35.	38.	39.	38.	35.	30.	24.	17.	15.	5.	0.	365.	78.	93.	68.	78.
NORTHEAST	0.	9.	50.	64.	60.	44.	35.	38.	39.	38.	35.	30.	24.	17.	10.	3.	0.	494.	85.	106.	72.	85.
EAST	0.	9.	61.	94.	107.	104.	90.	67.	39.	38.	35.	30.	24.	17.	10.	3.	0.	726.	98.	128.	80.	99.
SOUTHEAST	0.	6.	43.	79.	105.	121.	125.	118.	101.	76.	47.	30.	24.	17.	10.	3.	0.	903.	107.	145.	86.	110.
ORTIZ.	0.	5.	24.	49.	74.	90.	113.	124.	127.	124.	113.	96.	74.	49.	24.	5.	0.	1096.	118.	153.	93.	122.

MONTH	9	H0	1653.	TOD	50.	TOT	48.	KT	401	KD	.1P <sup>2</sup>											
ORIENTATION																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME		SAG/ALL DAY	
																	SATGS	SATGD	SATGS	SATGD		
SOUTH	0.	0.	0.	16.	48.	79.	104.	120.	125.	120.	104.	79.	48.	16.	0.	0.	859.	108.	153.	77.	100.	
SOUTHWEST	0.	0.	0.	7.	14.	20.	44.	73.	97.	113.	118.	109.	85.	42.	0.	0.	723.	99.	136.	73.	92.	
WEST	0.	0.	0.	7.	14.	20.	25.	28.	29.	56.	77.	87.	81.	48.	0.	0.	473.	82.	107.	64.	77.	
NORTHWEST	0.	0.	0.	7.	14.	20.	25.	28.	29.	28.	25.	26.	38.	29.	0.	0.	269.	68.	92.	57.	64.	
NORTH	0.	0.	0.	7.	14.	20.	25.	28.	29.	28.	25.	20.	14.	7.	0.	0.	217.	65.	76.	55.	61.	
NORTHEAST	0.	0.	0.	29.	38.	26.	25.	28.	29.	28.	25.	20.	14.	7.	0.	0.	269.	68.	92.	57.	64.	
EAST	0.	0.	0.	48.	81.	87.	77.	56.	29.	28.	25.	20.	14.	7.	0.	0.	473.	82.	107.	64.	77.	
SOUTHEAST	0.	0.	0.	42.	85.	109.	118.	113.	97.	73.	44.	20.	14.	7.	0.	0.	723.	99.	136.	73.	92.	
SORIZ.	0.	0.	1.	16.	39.	61.	78.	89.	93.	89.	78.	61.	39.	16.	1.	0.	662.	95.	129.	71.	88.	

LOCATION	MATANUSKA, ALASKA										LATITUDE 61 DEGREES 30 MINUTES											
MONTH 10	HO	820.	TOO	38.	TOT	36.	KT	.390	KD	.183												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD			
SOUTH	0.	0.	0.	0.	14.	60.	95.	117.	124.	117.	95.	60.	14.	0.	0.	0.	0.	696.	96.	143.	58.	77.
SOUTHWEST	0.	0.	0.	0.	4.	10.	38.	68.	93.	107.	105.	81.	22.	0.	0.	0.	0.	528.	82.	117.	53.	67.
WEST	0.	0.	0.	0.	4.	9.	14.	17.	18.	45.	62.	60.	20.	0.	0.	0.	0.	249.	58.	75.	44.	50.
NORTHWEST	0.	0.	0.	0.	4.	9.	14.	17.	18.	17.	14.	9.	8.	0.	0.	0.	0.	112.	47.	55.	40.	43.
NORTH	0.	0.	0.	0.	4.	9.	14.	17.	18.	17.	14.	9.	4.	0.	0.	0.	0.	107.	47.	54.	39.	42.
NORTHEAST	0.	0.	0.	0.	8.	9.	14.	17.	18.	17.	14.	9.	4.	0.	0.	0.	0.	112.	47.	55.	40.	43.
EAST	0.	0.	0.	0.	20.	60.	62.	45.	18.	17.	14.	9.	4.	0.	0.	0.	0.	249.	58.	75.	44.	50.
SOUTHEAST	0.	0.	0.	0.	22.	81.	105.	107.	93.	68.	38.	10.	4.	0.	0.	0.	0.	528.	82.	117.	53.	67.
HORIZ.	0.	0.	0.	0.	7.	26.	43.	55.	59.	55.	43.	26.	7.	0.	0.	0.	0.	320.	64.	86.	46.	55.
MONTH 11	HO	284.	TOO	23.	TOT	22.	KT	.372	KD	.182												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD			
SOUTH	0.	0.	0.	0.	0.	1.	55.	106.	122.	106.	55.	1.	0.	0.	0.	0.	0.	446.	77.	120.	37.	48.
SOUTHWEST	0.	0.	0.	0.	0.	1.	22.	60.	89.	95.	60.	1.	0.	0.	0.	0.	0.	326.	62.	94.	33.	41.
WEST	0.	0.	0.	0.	0.	1.	5.	8.	9.	33.	32.	1.	0.	0.	0.	0.	0.	88.	34.	42.	25.	27.
NORTHWEST	0.	0.	0.	0.	0.	1.	5.	8.	9.	8.	5.	1.	0.	0.	0.	0.	0.	36.	27.	31.	23.	24.
NORTH	0.	0.	0.	0.	0.	1.	5.	8.	9.	8.	5.	1.	0.	0.	0.	0.	0.	36.	27.	31.	23.	24.
NORTHEAST	0.	0.	0.	0.	0.	1.	5.	8.	9.	8.	5.	1.	0.	0.	0.	0.	0.	36.	27.	31.	23.	24.
EAST	0.	0.	0.	0.	0.	1.	32.	33.	9.	8.	5.	1.	0.	0.	0.	0.	0.	88.	34.	42.	25.	27.
SOUTHEAST	0.	0.	0.	0.	0.	1.	60.	95.	89.	60.	22.	1.	0.	0.	0.	0.	0.	326.	62.	94.	33.	41.
HORIZ.	0.	0.	0.	0.	0.	1.	12.	25.	29.	25.	12.	1.	0.	0.	0.	0.	0.	106.	36.	46.	26.	28.
MONTH 12	HO	131.	TOO	14.	TOT	14.	KT	.364	KD	.182												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD			
SOUTH	0.	0.	0.	0.	0.	0.	6.	89.	127.	89.	6.	0.	0.	0.	0.	0.	0.	316.	63.	104.	24.	32.
SOUTHWEST	0.	0.	0.	0.	0.	0.	3.	50.	91.	79.	6.	0.	0.	0.	0.	0.	0.	229.	50.	79.	21.	27.
WEST	0.	0.	0.	0.	0.	0.	1.	4.	5.	25.	4.	0.	0.	0.	0.	0.	0.	40.	20.	25.	15.	16.
NORTHWEST	0.	0.	0.	0.	0.	0.	1.	4.	5.	4.	1.	0.	0.	0.	0.	0.	0.	17.	17.	19.	14.	15.
NORTH	0.	0.	0.	0.	0.	0.	1.	4.	5.	4.	1.	0.	0.	0.	0.	0.	0.	17.	17.	19.	14.	15.
NORTHEAST	0.	0.	0.	0.	0.	0.	1.	4.	5.	4.	1.	0.	0.	0.	0.	0.	0.	17.	17.	19.	14.	15.
EAST	0.	0.	0.	0.	0.	0.	4.	25.	5.	4.	1.	0.	0.	0.	0.	0.	0.	40.	20.	25.	15.	16.
SOUTHEAST	0.	0.	0.	0.	0.	0.	6.	79.	91.	50.	3.	0.	0.	0.	0.	0.	0.	229.	50.	79.	21.	27.
HORIZ.	0.	0.	0.	0.	0.	0.	3.	12.	18.	12.	3.	0.	0.	0.	0.	0.	0.	48.	21.	28.	15.	17.

## LOCATION MATANUSKA, ALASKA

LATITUDE 61 DEGREES 30 MINUTES

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	104.	106.	39.	105.	103.	103.	105.	110.	108.	96.	77.	63.	93.
SOUTHWEST	79.	85.	39.	102.	105.	106.	107.	107.	99.	82.	62.	50.	85.
WEST	30.	50.	39.	89.	100.	104.	103.	98.	82.	58.	34.	20.	67.
NORTHWEST	19.	32.	39.	70.	87.	94.	93.	85.	68.	47.	27.	17.	56.
NORTH	19.	31.	39.	59.	78.	86.	85.	78.	65.	47.	27.	17.	53.
NORTHEAST	19.	32.	39.	70.	87.	94.	93.	85.	68.	47.	27.	17.	56.
EAST	30.	50.	39.	89.	100.	104.	103.	98.	82.	58.	34.	20.	67.
SOUTHEAST	79.	85.	39.	102.	105.	106.	107.	107.	99.	82.	62.	50.	85.
HORIZ.	32.	56.	46.	112.	128.	132.	128.	118.	95.	64.	36.	21.	81.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	177.	176.	48.	160.	143.	138.	140.	149.	153.	143.	120.	104.	137.
SOUTHWEST	132.	137.	48.	155.	146.	143.	143.	145.	136.	117.	94.	79.	123.
WEST	43.	74.	48.	129.	138.	140.	136.	128.	107.	75.	42.	25.	90.
NORTHWEST	23.	41.	48.	96.	115.	122.	118.	106.	82.	55.	31.	19.	71.
NORTH	23.	39.	48.	76.	99.	108.	105.	93.	76.	54.	31.	18.	64.
NORTHEAST	23.	41.	48.	96.	115.	122.	118.	106.	82.	55.	31.	19.	71.
EAST	43.	74.	48.	129.	138.	140.	136.	128.	107.	75.	42.	25.	90.
SOUTHEAST	132.	137.	48.	155.	146.	143.	143.	145.	136.	117.	94.	79.	123.
HORIZ.	46.	85.	61.	172.	188.	189.	180.	163.	129.	86.	46.	28.	114.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	37.	52.	30.	77.	84.	90.	91.	88.	77.	58.	37.	24.	62.
SOUTHWEST	30.	44.	30.	75.	86.	92.	92.	86.	73.	53.	33.	21.	60.
WEST	17.	30.	30.	67.	82.	91.	89.	80.	64.	44.	25.	15.	53.
NORTHWEST	14.	23.	30.	55.	73.	83.	82.	72.	57.	40.	23.	14.	47.
NORTH	14.	23.	30.	48.	66.	76.	76.	68.	55.	39.	23.	14.	45.
NORTHEAST	14.	23.	30.	55.	73.	83.	82.	72.	57.	40.	23.	14.	47.
EAST	17.	30.	30.	67.	82.	91.	89.	80.	64.	44.	25.	15.	53.
SOUTHEAST	30.	44.	30.	75.	86.	92.	92.	86.	73.	53.	33.	21.	60.
HORIZ.	18.	32.	34.	81.	103.	113.	108.	93.	71.	46.	26.	15.	62.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	57.	79.	35.	112.	114.	117.	117.	113.	100.	77.	48.	32.	83.
SOUTHWEST	45.	64.	35.	108.	117.	121.	119.	110.	92.	67.	41.	27.	79.
WEST	21.	39.	35.	92.	111.	119.	114.	99.	77.	50.	27.	16.	67.
NORTHWEST	15.	26.	35.	71.	94.	105.	100.	85.	64.	43.	24.	15.	56.
NORTH	15.	26.	35.	59.	81.	94.	90.	78.	61.	42.	24.	15.	52.
NORTHEAST	15.	26.	35.	71.	94.	105.	100.	85.	64.	43.	24.	15.	56.
EAST	21.	39.	35.	92.	111.	119.	114.	99.	77.	50.	27.	16.	67.
SOUTHEAST	45.	64.	35.	108.	117.	121.	119.	110.	92.	67.	41.	27.	79.
HORIZ.	22.	43.	42.	119.	147.	158.	146.	122.	88.	55.	28.	17.	82.

LOCATION MEDFORD, OREGON LATITUDE 42 DEGREES 23 MINUTES

MONTH	1	HO	1299.	TOC	39.	TOT	37.	KT	.353	KD	.181	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	27.	63.	87.	101.	105.	101.	87.	63.	27.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	6.	16.	41.	64.	82.	94.	95.	82.	42.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	6.	15.	21.	26.	27.	47.	60.	61.	36.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	6.	15.	21.	26.	27.	26.	21.	15.	13.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	6.	15.	21.	26.	27.	26.	21.	15.	6.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	13.	15.	21.	26.	27.	26.	21.	15.	6.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	36.	61.	60.	47.	27.	26.	21.	15.	6.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	42.	82.	95.	94.	82.	64.	41.	16.	6.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	14.	40.	61.	75.	79.	75.	61.	40.	14.	0.	0.	0.	0.

MONTH	2	HO	1877.	TON	45.	TOT	43.	KT	.464	KD	.186	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	9.	59.	98.	126.	143.	149.	143.	126.	98.	59.	9.	0.	0.	0.
SOUTHWEST	0.	0.	0.	3.	14.	24.	52.	87.	117.	137.	144.	136.	104.	21.	0.	0.	0.
WEST	0.	0.	0.	3.	14.	24.	32.	37.	39.	72.	97.	109.	97.	22.	0.	0.	0.
NORTHWEST	0.	0.	0.	3.	14.	24.	32.	37.	39.	37.	32.	32.	41.	12.	0.	0.	0.
NORTH	0.	0.	0.	3.	14.	24.	32.	37.	39.	37.	32.	24.	14.	3.	0.	0.	0.
NORTHEAST	0.	0.	0.	12.	41.	52.	32.	37.	39.	37.	32.	24.	14.	3.	0.	0.	0.
EAST	0.	0.	0.	22.	97.	109.	97.	72.	39.	37.	32.	24.	14.	3.	0.	0.	0.
SOUTHEAST	0.	0.	0.	21.	104.	136.	144.	137.	117.	87.	52.	24.	14.	3.	0.	0.	0.
HORIZ.	0.	0.	0.	7.	43.	80.	110.	124.	134.	128.	110.	80.	43.	7.	0.	0.	0.

MONTH	3	HO	2530.	TON	51.	TOT	47.	KT	.527	KD	.184	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	27.	69.	106.	136.	154.	161.	154.	136.	106.	69.	27.	0.	0.	0.
SOUTHWEST	0.	0.	0.	11.	23.	34.	51.	93.	128.	153.	165.	162.	138.	86.	0.	0.	0.
WEST	0.	0.	0.	11.	23.	34.	42.	47.	49.	90.	123.	142.	141.	101.	0.	0.	0.
NORTHWEST	0.	0.	0.	11.	23.	34.	42.	47.	49.	47.	42.	59.	75.	63.	0.	0.	0.
NORTH	0.	0.	0.	11.	23.	34.	42.	47.	49.	47.	42.	34.	23.	11.	0.	0.	0.
NORTHEAST	0.	0.	0.	63.	75.	59.	42.	47.	49.	47.	42.	34.	23.	11.	0.	0.	0.
EAST	0.	0.	0.	101.	141.	142.	123.	90.	49.	47.	42.	34.	23.	11.	0.	0.	0.
SOUTHEAST	0.	0.	0.	86.	138.	162.	165.	153.	128.	93.	51.	34.	23.	11.	0.	0.	0.
HORIZ.	0.	0.	0.	34.	81.	124.	157.	178.	185.	178.	157.	124.	81.	34.	0.	0.	0.



LOCATION	MEDFORD, OREGON	LATITUDE		42 DEGREES		23 MINUTES																				
MONTH	4	HO	3185.	TOO	56.	TOT	52.	KT	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGD	
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20								
SOUTH	0.	0.	7.	22.	61.	99.	129.	149.	156.	149.	129.	99.	61.	22.	7.	0.	0.	0.	1092.	119.	170.	87.	116.			
SOUTHWEST	0.	0.	7.	20.	32.	42.	50.	87.	127.	156.	172.	172.	172.	153.	114.	46.	0.	0.	1177.	123.	178.	90.	121.			
WEST	0.	0.	7.	20.	32.	42.	50.	55.	57.	104.	143.	168.	174.	151.	72.	0.	0.	0.	1074.	118.	168.	87.	115.			
NORTHWEST	0.	0.	7.	20.	32.	42.	50.	55.	57.	55.	59.	91.	111.	111.	60.	0.	0.	0.	749.	99.	134.	76.	96.			
NORTH	0.	0.	17.	20.	32.	42.	50.	55.	57.	55.	50.	42.	32.	20.	17.	0.	0.	0.	487.	84.	107.	68.	81.			
NORTHEAST	0.	0.	60.	111.	111.	91.	59.	55.	57.	55.	50.	42.	32.	20.	7.	0.	0.	0.	749.	99.	134.	76.	96.			
EAST	0.	0.	72.	151.	174.	168.	143.	104.	57.	55.	50.	42.	32.	20.	7.	0.	0.	0.	1074.	118.	168.	87.	115.			
SOUTHEAST	0.	0.	46.	114.	153.	172.	172.	156.	127.	87.	50.	42.	32.	20.	7.	0.	0.	0.	1177.	123.	178.	90.	121.			
HORIZ.	0.	0.	20.	70.	123.	169.	204.	227.	235.	227.	204.	169.	123.	70.	20.	0.	0.	0.	1861.	163.	249.	112.	161.			
MONTH	5	HO	3610.	TOO	63.	TOT	59.	KT	.625												.164					
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGD				
SOUTH	0.	2.	13.	25.	48.	85.	116.	135.	142.	135.	116.	85.	48.	25.	13.	2.	0.	0.	988.	119.	161.	93.	118.			
SOUTHWEST	0.	2.	13.	25.	36.	46.	54.	76.	118.	150.	168.	169.	154.	121.	69.	5.	0.	0.	1204.	131.	182.	100.	131.			
WEST	0.	2.	13.	25.	36.	46.	54.	59.	60.	111.	153.	181.	191.	175.	121.	9.	0.	0.	1236.	132.	186.	101.	133.			
NORTHWEST	0.	2.	13.	25.	36.	46.	54.	59.	60.	59.	80.	114.	138.	142.	110.	9.	0.	0.	946.	116.	157.	91.	116.			
NORTH	0.	5.	42.	40.	36.	46.	54.	59.	60.	59.	54.	46.	36.	40.	42.	5.	0.	0.	624.	98.	125.	80.	96.			
NORTHEAST	0.	9.	110.	142.	136.	114.	80.	59.	60.	59.	54.	46.	36.	25.	13.	2.	0.	0.	946.	116.	157.	91.	116.			
EAST	0.	9.	121.	175.	191.	181.	153.	111.	60.	59.	54.	46.	36.	25.	13.	2.	0.	0.	1236.	132.	186.	101.	133.			
SOUTHEAST	0.	5.	69.	121.	154.	169.	188.	150.	118.	76.	54.	46.	36.	25.	13.	2.	0.	0.	1204.	131.	182.	100.	131.			
HORIZ.	0.	4.	44.	98.	152.	200.	236.	259.	267.	259.	236.	200.	152.	98.	44.	4.	0.	0.	2256.	190.	287.	136.	195.			
MONTH	6	HO	3765.	TOO	69.	TOT	65.	KT	.648												.162					
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGD				
SOUTH	0.	4.	15.	26.	41.	78.	109.	129.	135.	129.	109.	78.	41.	26.	15.	4.	0.	0.	939.	120.	160.	97.	122.			
SOUTHWEST	0.	4.	15.	26.	38.	47.	55.	70.	114.	147.	166.	169.	154.	122.	73.	14.	0.	0.	1212.	135.	186.	106.	138.			
WEST	0.	4.	15.	26.	38.	47.	55.	59.	61.	114.	158.	188.	199.	186.	136.	32.	0.	0.	1317.	141.	196.	110.	144.			
NORTHWEST	0.	4.	15.	26.	38.	47.	55.	59.	61.	59.	89.	125.	150.	156.	128.	34.	0.	0.	1046.	126.	170.	101.	128.			
NORTH	0.	18.	54.	50.	38.	47.	55.	59.	61.	59.	55.	47.	38.	50.	54.	18.	0.	0.	704.	108.	137.	89.	107.			
NORTHEAST	0.	34.	128.	156.	150.	125.	89.	59.	61.	59.	55.	47.	38.	26.	15.	4.	0.	0.	1046.	126.	170.	101.	128.			
EAST	0.	32.	136.	186.	199.	188.	158.	114.	61.	59.	55.	47.	38.	26.	15.	4.	0.	0.	1317.	141.	196.	110.	144.			
SOUTHEAST	0.	14.	73.	122.	154.	169.	166.	147.	114.	70.	55.	47.	38.	26.	15.	4.	0.	0.	1212.	135.	186.	106.	138.			
SORIZ.	0.	9.	54.	110.	165.	214.	251.	275.	251.	214.	165.	110.	54.	9.	0.	0.	0.	0.	2440.	202.	304.	148.	212.			



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LOCATION	MEDFORD, OREGON		LATITUDE 42 DEGREES 23 MINUTES		ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)												ANNUAL AVERAGE
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC					
SOUTH	93.	119.	124.	119.	119.	120.	137.	154.	165.	145.	108.	85.			124.		
SOUTHWEST	82.	106.	118.	123.	131.	135.	152.	160.	155.	129.	95.	75.			122.		
WEST	64.	85.	102.	118.	132.	141.	154.	152.	134.	102.	73.	60.			110.		
NORTHWEST	53.	67.	82.	99.	116.	126.	135.	124.	106.	81.	61.	52.			92.		
NORTH	53.	64.	74.	84.	98.	108.	112.	106.	95.	78.	61.	52.			82.		
NORTHEAST	53.	67.	82.	99.	116.	126.	135.	126.	106.	81.	61.	52.			92.		
EAST	64.	85.	102.	118.	132.	141.	154.	152.	134.	102.	73.	60.			110.		
SOUTHEAST	82.	106.	118.	123.	131.	135.	152.	160.	155.	129.	95.	75.			122.		
HORIZ.	77.	108.	136.	163.	190.	202.	220.	202.	177.	129.	88.	70.			147.		
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)																	
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC			ANNUAL AVERAGE		
SOUTH	137.	179.	184.	170.	161.	160.	184.	213.	237.	215.	158.	121.			176.		
SOUTHWEST	117.	155.	172.	178.	182.	186.	210.	224.	221.	186.	134.	103.			172.		
WEST	84.	117.	144.	168.	186.	196.	214.	209.	183.	138.	95.	75.			151.		
NORTHWEST	65.	85.	108.	134.	157.	170.	179.	164.	134.	100.	73.	61.			119.		
NORTH	64.	80.	93.	107.	125.	137.	140.	128.	114.	94.	72.	61.			101.		
NORTHEAST	65.	85.	108.	134.	157.	170.	179.	164.	134.	100.	73.	61.			119.		
EAST	84.	117.	144.	168.	186.	196.	214.	209.	183.	133.	95.	75.			151.		
SOUTHEAST	117.	155.	172.	178.	182.	186.	210.	224.	221.	186.	134.	103.			172.		
HORIZ.	107.	159.	205.	249.	287.	304.	330.	311.	259.	186.	121.	94.			218.		
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)																	
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC			ANNUAL AVERAGE		
SOUTH	58.	75.	84.	87.	93.	97.	109.	115.	112.	93.	68.	55.			87.		
SOUTHWEST	54.	70.	81.	90.	100.	106.	118.	118.	108.	86.	63.	51.			87.		
WEST	47.	60.	73.	87.	101.	110.	119.	113.	97.	74.	55.	46.			82.		
NORTHWEST	43.	52.	63.	76.	91.	101.	107.	99.	83.	65.	50.	43.			73.		
NORTH	42.	51.	59.	68.	80.	89.	93.	88.	77.	63.	50.	43.			67.		
NORTHEAST	43.	52.	63.	76.	91.	101.	107.	99.	83.	65.	50.	43.			73.		
EAST	47.	60.	73.	87.	101.	110.	119.	113.	97.	74.	55.	46.			82.		
SOUTHEAST	54.	70.	81.	90.	100.	106.	118.	118.	108.	86.	63.	51.			87.		
HORIZ.	52.	71.	90.	112.	136.	148.	159.	146.	118.	86.	60.	49.			102.		
ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)																	
ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC			ANNUAL AVERAGE		
SOUTH	76.	102.	114.	116.	118.	122.	137.	148.	149.	124.	88.	68.			113.		
SOUTHWEST	68.	92.	108.	121.	131.	138.	153.	154.	141.	111.	78.	62.			113.		
WEST	55.	74.	94.	115.	133.	144.	155.	146.	121.	90.	63.	51.			104.		
NORTHWEST	47.	60.	76.	96.	116.	128.	134.	120.	97.	73.	54.	46.			87.		
NORTH	47.	58.	68.	81.	96.	107.	110.	100.	87.	70.	54.	46.			77.		
NORTHEAST	47.	60.	76.	96.	116.	128.	134.	120.	97.	73.	54.	46.			87.		
EAST	55.	74.	94.	115.	133.	144.	155.	146.	121.	90.	63.	51.			104.		
SOUTHEAST	68.	92.	108.	121.	131.	138.	153.	154.	141.	111.	78.	62.			113.		
HORIZ.	64.	93.	125.	161.	195.	212.	227.	203.	160.	111.	73.	58.			140.		



LOCATION	MIAMI, FLORIDA	LATITUDE	25 DEGREES	47 MINUTES
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MONTH	2	H0	2637.	T00	72.	TOT	69.	KT	.616	KD	.170											
ORIENTATION																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY			
																		SATGS	SATGD	SATGS	SATGD	
SOUTH	0.	0.	0.	36.	89.	129.	159.	177.	183.	177.	159.	129.	89.	36.	0.	0.	0.	1364.	165.	241.	112.	148.
SOUTHWEST	0.	0.	0.	8.	23.	36.	52.	102.	146.	180.	199.	200.	175.	95.	0.	0.	0.	1217.	155.	222.	108.	140.
WEST	0.	0.	0.	0.	8.	23.	36.	46.	53.	55.	108.	150.	175.	103.	0.	0.	0.	929.	135.	187.	99.	123.
NORTHWEST	0.	0.	0.	0.	8.	23.	36.	46.	53.	55.	53.	46.	69.	82.	56.	0.	0.	526.	108.	137.	86.	99.
NORTH	0.	0.	0.	0.	8.	23.	36.	46.	53.	55.	53.	46.	36.	23.	8.	0.	0.	387.	98.	120.	81.	91.
NORTHEAST	0.	0.	0.	56.	82.	69.	46.	53.	55.	53.	46.	36.	23.	8.	0.	0.	0.	526.	108.	137.	86.	99.
EAST	0.	0.	0.	103.	172.	175.	150.	108.	55.	53.	46.	36.	23.	8.	0.	0.	0.	929.	135.	187.	99.	123.
SOUTHEAST	0.	0.	0.	95.	175.	200.	199.	180.	146.	102.	52.	36.	23.	8.	0.	0.	0.	1217.	155.	222.	108.	140.
HORIZ.	0.	0.	0.	26.	92.	151.	198.	227.	237.	227.	198.	151.	92.	26.	0.	0.	0.	1627.	183.	273.	121.	163.

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LOCATION		MIAMI, FLORIDA		LATITUDE 25 DEGREES 47 MINUTES														
MONTH	4	H0	3425.	T00	77.	T0T	75.	KT	.600	KD								.174
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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SOUTH	0.	0.	4.	19.	38.	68.	92.	107.	112.	107.	92.	68.	38.	19.	4.	0.	0.	0.
SOUTHWEST	0.	0.	4.	19.	33.	46.	56.	62.	98.	130.	149.	154.	140.	104.	23.	0.	0.	0.
WEST	0.	0.	4.	19.	33.	46.	56.	62.	64.	113.	152.	177.	180.	149.	37.	0.	0.	0.
NORTHWEST	0.	0.	4.	19.	33.	46.	56.	62.	64.	66.	98.	123.	134.	119.	31.	0.	0.	0.
NORTH	0.	0.	11.	29.	33.	46.	56.	62.	64.	62.	56.	46.	33.	29.	11.	0.	0.	0.
NORTHEAST	0.	0.	31.	119.	134.	123.	98.	66.	64.	62.	56.	46.	33.	19.	4.	0.	0.	0.
EAST	0.	0.	37.	149.	180.	177.	152.	113.	64.	62.	56.	46.	33.	19.	4.	0.	0.	0.
SOUTHEAST	0.	0.	23.	104.	140.	154.	149.	130.	98.	62.	56.	46.	33.	19.	4.	0.	0.	0.
HORIZ.	0.	0.	10.	68.	132.	189.	233.	260.	270.	260.	233.	189.	132.	68.	10.	0.	0.	0.
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DAILY TOTAL RADIATION																		
SAG/DAYTIME SATGS		123.	161.	100.	120.	138.	188.	108.	134.	143.	196.	110.	138.	138.	188.	108.	134.	134.
SAG/ALL DAY SATGS		767.	1018.	1091.	855.	855.	1091.	1018.	2054.	136.	110.	138.	138.	201.	302.	141.	195.	195.

MONTH	5	H0	3596.	T00	80.	T0T	78.	KT	.578	KD								.177
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		-----																
SOUTH	0.	0.	8.	22.	36.	47.	64.	78.	82.	78.	64.	47.	36.	22.	8.	0.	0.	0.
SOUTHWEST	0.	0.	8.	22.	36.	47.	57.	62.	77.	105.	123.	127.	117.	89.	35.	0.	0.	0.
WEST	0.	0.	8.	22.	36.	47.	57.	62.	64.	108.	143.	164.	168.	144.	66.	0.	0.	0.
NORTHWEST	0.	0.	8.	22.	36.	47.	57.	62.	64.	83.	112.	133.	141.	128.	63.	0.	0.	0.
NORTH	0.	0.	27.	50.	53.	51.	57.	62.	64.	62.	57.	51.	53.	50.	27.	0.	0.	0.
NORTHEAST	0.	0.	63.	128.	141.	133.	112.	83.	64.	62.	57.	47.	36.	22.	8.	0.	0.	0.
EAST	0.	0.	66.	144.	168.	164.	143.	108.	64.	62.	57.	47.	36.	22.	8.	0.	0.	0.
SOUTHEAST	0.	0.	35.	89.	117.	127.	123.	105.	77.	62.	57.	47.	36.	22.	8.	0.	0.	0.
HORIZ.	0.	0.	21.	78.	137.	189.	229.	255.	263.	255.	229.	189.	137.	78.	21.	0.	0.	0.
		-----																
DAILY TOTAL RADIATION																		
SAG/DAYTIME SATGS		116.	144.	98.	114.	135.	178.	109.	133.	147.	198.	111.	136.	121.	152.	101.	118.	136.
SAG/ALL DAY SATGS		591.	905.	1088.	956.	664.	956.	1088.	905.	2080.	147.	198.	135.	178.	109.	133.	147.	204.

MONTH	6	H0	3645.	T00	83.	T0T	81.	KT	.545	KD								.182
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		-----																
SOUTH	0.	0.	9.	23.	36.	47.	56.	66.	71.	66.	56.	47.	36.	23.	9.	0.	0.	0.
SOUTHWEST	0.	0.	9.	23.	36.	47.	56.	62.	68.	93.	108.	112.	102.	78.	34.	0.	0.	0.
WEST	0.	0.	9.	23.	36.	47.	56.	62.	64.	102.	132.	151.	153.	132.	68.	0.	0.	0.
NORTHWEST	0.	0.	9.	23.	36.	47.	56.	62.	64.	87.	111.	129.	135.	122.	67.	0.	0.	0.
NORTH	0.	0.	32.	54.	59.	60.	58.	62.	64.	62.	58.	60.	59.	54.	32.	0.	0.	0.
NORTHEAST	0.	0.	67.	122.	135.	129.	111.	87.	64.	62.	56.	47.	36.	23.	9.	0.	0.	0.
EAST	0.	0.	68.	132.	153.	151.	132.	102.	64.	62.	56.	47.	36.	23.	9.	0.	0.	0.
SOUTHEAST	0.	0.	34.	78.	102.	112.	108.	93.	68.	62.	56.	47.	36.	23.	9.	0.	0.	0.
HORIZ.	0.	0.	25.	78.	132.	180.	216.	240.	248.	240.	216.	180.	132.	78.	25.	0.	0.	0.
		-----																
DAILY TOTAL RADIATION																		
SAG/DAYTIME SATGS		116.	141.	100.	114.	133.	171.	110.	131.	145.	193.	117.	144.	140.	184.	114.	139.	124.
SAG/ALL DAY SATGS		546.	830.	1034.	948.	714.	948.	1034.	1987.	146.	184.	144.	139.	133.	171.	110.	131.	201.

LOCATION	MIAMI, FLORIDA		LATITUDE		25 DEGRFS		47 MINUTES										
MONTH	7	HO 3588.	TOD 84.	TOT 83.	KT	.552	KD	.181									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	8.	22.	35.	47.	63.	75.	80.	75.	63.	47.	35.	22.	8.	0.	0.
SOUTHWEST	0.	0.	8.	22.	35.	47.	56.	62.	75.	101.	117.	120.	109.	82.	32.	0.	0.
WEST	0.	0.	8.	22.	35.	47.	56.	62.	75.	101.	117.	120.	109.	82.	32.	0.	0.
NORTHWEST	0.	0.	8.	22.	35.	47.	56.	62.	75.	101.	117.	120.	109.	82.	32.	0.	0.
NORTH	0.	0.	25.	47.	52.	51.	56.	62.	64.	82.	108.	126.	133.	118.	57.	0.	0.
NORTHEAST	0.	0.	57.	118.	133.	126.	108.	82.	64.	62.	56.	51.	52.	47.	25.	0.	0.
EAST	0.	0.	59.	133.	157.	155.	136.	104.	64.	62.	56.	47.	35.	22.	8.	0.	0.
SOUTHEAST	0.	0.	32.	82.	109.	120.	117.	101.	75.	62.	56.	47.	35.	22.	8.	0.	0.
HORIZ.	0.	0.	20.	74.	130.	180.	218.	243.	251.	243.	218.	180.	130.	74.	20.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS																	
SAG/ALL DAY SATGS																	
SATGD																	
118.																	
135.																	
145.																	
138.																	
122.																	
138.																	
145.																	
145.																	
135.																	
202.																	

MONTH	8	HO 3397.	TOD 84.	TOT 83.	KT	.549	KD	.181									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	4.	19.	36.	63.	85.	99.	104.	99.	85.	63.	36.	19.	4.	0.	0.
SOUTHWEST	0.	0.	4.	19.	33.	45.	55.	61.	92.	119.	135.	137.	123.	89.	18.	0.	0.
WEST	0.	0.	4.	19.	33.	45.	55.	61.	92.	119.	135.	137.	123.	89.	18.	0.	0.
NORTHWEST	0.	0.	4.	19.	33.	45.	55.	61.	92.	119.	135.	137.	123.	89.	18.	0.	0.
NORTH	0.	0.	9.	28.	33.	45.	55.	61.	92.	119.	135.	137.	123.	89.	18.	0.	0.
NORTHEAST	0.	0.	24.	101.	118.	111.	92.	64.	63.	61.	55.	45.	33.	19.	4.	0.	0.
EAST	0.	0.	27.	126.	157.	157.	137.	104.	63.	61.	55.	45.	33.	19.	4.	0.	0.
SOUTHEAST	0.	0.	18.	89.	123.	137.	135.	119.	92.	61.	55.	45.	33.	19.	4.	0.	0.
HORIZ.	0.	0.	9.	61.	120.	171.	211.	237.	245.	237.	211.	171.	120.	61.	9.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS																	
SAG/ALL DAY SATGS																	
SATGD																	
126.																	
139.																	
143.																	
131.																	
114.																	
131.																	
143.																	
139.																	
196.																	

MONTH	9	HO 3049.	TOD 83.	TOT 82.	KT	.525	KD	.185									
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	23.	56.	86.	109.	123.	128.	123.	109.	86.	56.	23.	0.	0.	0.
SOUTHWEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	99.	130.	147.	145.	105.	0.	0.	0.
WEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	99.	130.	147.	145.	105.	0.	0.	0.
NORTHWEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	99.	130.	147.	145.	105.	0.	0.	0.
NORTH	0.	0.	0.	14.	28.	41.	51.	57.	59.	99.	130.	147.	145.	105.	0.	0.	0.
NORTHEAST	0.	0.	0.	71.	91.	84.	65.	57.	59.	57.	51.	41.	28.	14.	0.	0.	0.
EAST	0.	0.	0.	105.	145.	147.	130.	99.	59.	57.	51.	41.	28.	14.	0.	0.	0.
SOUTHEAST	0.	0.	0.	85.	130.	148.	133.	108.	74.	51.	41.	28.	14.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	42.	98.	149.	188.	213.	221.	213.	188.	149.	98.	42.	0.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS																	
SAG/ALL DAY SATGS																	
SATGD																	
137.																	
140.																	
135.																	
119.																	
108.																	
119.																	
135.																	
140.																	
178.																	

LOCATION	MIAMI, FLORIDA	LATITUDE	25 DEGREES	47 MINUTES
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[illegible]

ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SAT6S	SAT6D	SAT6S	SAT6D
SOUTH	0	0	0	28	74	109	134	150	155	150	134	109	74	28	0	0	0	1144	158	222	115	145
SOUTHWEST	0	0	0	8	23	35	51	90	125	152	165	164	140	70	0	0	0	1022	150	207	111	137
WEST	0	0	0	0	8	23	35	45	51	53	94	126	143	137	75	0	0	792	134	178	103	124
NORTHWEST	0	0	0	0	8	23	35	45	51	53	51	45	60	67	42	0	0	481	113	140	93	106
NORTH	0	0	0	0	8	23	35	45	51	53	51	45	35	23	8	0	0	378	106	127	90	100
NORTHEAST	0	0	0	0	42	67	60	45	51	53	51	45	35	23	8	0	0	481	113	140	93	106
EAST	0	0	0	75	137	143	126	94	53	51	45	35	23	8	0	0	0	792	134	178	103	124
SOUTHEAST	0	0	0	0	70	140	164	165	152	125	90	51	35	23	8	0	0	1022	150	207	111	137
HORIZ.	0	0	0	23	78	129	169	195	203	195	169	129	78	23	0	0	0	1392	175	252	123	159

	HO	TOT	KT	KD
MONTH 11	2171.	76.	72.	.559
				.180

ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	15.	87.	129.	159.	176.	182.	176.	159.	129.	87.	15.	0.	0.	0.	1315.	171.	248.	114.	149.
SOUTHWEST	0.	0.	0.	4.	17.	30.	64.	106.	143.	170.	184.	179.	144.	30.	0.	0.	0.	1069.	153.	216.	106.	134.
WEST	0.	0.	0.	0.	4.	17.	30.	39.	45.	47.	91.	124.	141.	127.	29.	0.	0.	694.	126.	167.	94.	113.
NORTHWEST	0.	0.	0.	0.	4.	17.	30.	39.	45.	47.	45.	39.	38.	46.	14.	0.	0.	364.	102.	123.	84.	93.
NORTH	0.	0.	0.	4.	17.	30.	39.	45.	47.	45.	39.	30.	17.	4.	0.	0.	0.	317.	98.	117.	82.	91.
NORTHEAST	0.	0.	0.	14.	46.	38.	39.	45.	47.	45.	39.	30.	17.	4.	0.	0.	0.	364.	102.	123.	84.	93.
EAST	0.	0.	0.	29.	127.	141.	124.	91.	47.	45.	39.	30.	17.	4.	0.	0.	0.	694.	126.	167.	94.	113.
SOUTHEAST	0.	0.	0.	30.	144.	179.	184.	170.	143.	106.	64.	30.	17.	4.	0.	0.	0.	1069.	153.	216.	106.	134.
HORIZ.	0.	0.	0.	8.	60.	112.	153.	179.	188.	179.	153.	112.	60.	8.	0.	0.	0.	1212.	163.	235.	111.	143.

[illegible]

ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	6.	94.	143.	176.	195.	201.	195.	176.	143.	94.	6.	0.	0.	0.	1428.	178.	265.	115.	152.
SOUTHWEST	0.	0.	0.	2.	15.	27.	71.	116.	155.	184.	199.	193.	151.	9.	0.	0.	0.	1122.	156.	224.	105.	135.
WEST	0.	0.	0.	0.	2.	15.	27.	37.	43.	45.	91.	127.	145.	128.	9.	0.	0.	669.	122.	163.	91.	108.
NORTHWEST	0.	0.	0.	0.	2.	15.	27.	37.	43.	45.	43.	37.	28.	39.	4.	0.	0.	320.	96.	116.	79.	88.
NORTH	0.	0.	0.	2.	15.	27.	37.	43.	45.	43.	37.	27.	15.	2.	0.	0.	0.	292.	94.	112.	79.	86.
NORTHEAST	0.	0.	0.	4.	39.	28.	37.	43.	45.	43.	37.	27.	15.	2.	0.	0.	0.	320.	96.	116.	79.	88.
EAST	0.	0.	0.	9.	128.	145.	127.	91.	45.	43.	37.	27.	15.	2.	0.	0.	0.	669.	122.	163.	91.	108.
SOUTHEAST	0.	0.	0.	9.	151.	193.	199.	184.	155.	116.	71.	27.	15.	2.	0.	0.	0.	1122.	156.	224.	105.	135.
HORIZ.	0.	0.	0.	4.	53.	108.	150.	178.	187.	178.	150.	108.	53.	4.	0.	0.	0.	1172.	159.	230.	107.	137.



## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	177.	165.	144.	123.	116.	116.	120.	131.	146.	158.	171.	178.	145.
SOUTHWEST	157.	155.	147.	138.	135.	133.	137.	144.	149.	150.	153.	156.	146.
WEST	126.	143.	140.	143.	147.	148.	148.	144.	143.	126.	126.	122.	138.
NORTHWEST	99.	108.	118.	129.	139.	140.	140.	135.	125.	113.	102.	96.	120.
NORTH	95.	98.	103.	109.	121.	126.	124.	118.	113.	106.	98.	94.	109.
NORTHEAST	99.	108.	118.	129.	139.	140.	140.	135.	125.	113.	102.	96.	120.
EAST	126.	135.	140.	143.	147.	145.	148.	144.	143.	134.	126.	122.	138.
SOUTHEAST	157.	155.	147.	138.	135.	133.	137.	144.	149.	150.	153.	156.	146.
HORIZ.	167.	183.	194.	201.	208.	203.	206.	204.	192.	175.	163.	159.	188.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	263.	241.	201.	161.	144.	141.	147.	166.	194.	222.	248.	265.	199.
SOUTHWEST	227.	222.	206.	188.	178.	171.	178.	190.	199.	207.	216.	224.	200.
WEST	171.	187.	193.	196.	198.	193.	196.	197.	189.	178.	167.	163.	186.
NORTHWEST	121.	137.	154.	171.	184.	184.	183.	174.	158.	140.	123.	116.	154.
NORTH	114.	120.	126.	136.	152.	159.	155.	144.	136.	127.	117.	112.	133.
NORTHEAST	121.	137.	154.	171.	184.	184.	183.	174.	158.	140.	123.	116.	154.
EAST	171.	187.	193.	196.	198.	193.	196.	197.	189.	178.	167.	163.	186.
SOUTHEAST	227.	222.	206.	188.	171.	171.	178.	190.	199.	207.	216.	224.	200.
HORIZ.	244.	273.	292.	302.	305.	295.	299.	296.	276.	252.	235.	230.	275.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	115.	112.	106.	100.	98.	100.	102.	107.	113.	115.	114.	115.	108.
SOUTHWEST	106.	108.	108.	108.	109.	110.	112.	115.	115.	111.	106.	105.	109.
WEST	93.	99.	104.	110.	115.	117.	118.	117.	112.	103.	94.	91.	106.
NORTHWEST	80.	86.	93.	102.	111.	114.	114.	110.	103.	93.	84.	79.	97.
NORTH	79.	81.	86.	92.	101.	106.	105.	101.	97.	90.	82.	79.	91.
NORTHEAST	80.	86.	93.	102.	111.	114.	114.	110.	103.	93.	84.	79.	97.
EAST	93.	99.	104.	110.	115.	117.	118.	117.	112.	103.	94.	91.	106.
SOUTHEAST	106.	108.	108.	108.	109.	110.	112.	115.	115.	111.	106.	105.	109.
HORIZ.	111.	121.	132.	141.	149.	149.	150.	147.	136.	123.	111.	107.	131.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	153.	148.	135.	120.	114.	114.	118.	126.	137.	145.	149.	152.	134.
SOUTHWEST	137.	140.	138.	134.	133.	131.	135.	136.	140.	137.	134.	135.	136.
WEST	112.	123.	131.	138.	144.	145.	145.	143.	135.	124.	113.	108.	130.
NORTHWEST	90.	99.	111.	125.	136.	139.	138.	131.	119.	106.	93.	88.	115.
NORTH	87.	91.	97.	106.	118.	124.	122.	114.	108.	100.	91.	86.	104.
NORTHEAST	90.	99.	111.	125.	136.	139.	138.	131.	119.	106.	93.	88.	115.
EAST	112.	123.	131.	138.	144.	144.	145.	143.	135.	124.	113.	108.	130.
SOUTHEAST	137.	140.	138.	134.	133.	131.	135.	139.	140.	137.	134.	135.	136.
HORIZ.	145.	163.	181.	195.	204.	201.	202.	196.	178.	159.	143.	137.	175.



LOCATION	MIDLAND, TEXAS	LATITUDE	31 DEGREES	55 MINUTES
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MONTH	4	H0	3366.	T00	69.	T0T	64.	KT	.617	KD	.170						
ORIENTATION																	
HOURLY SOLAR RADIATION																	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	5.	19.	48.	83.	111.	128.	135.	128.	111.	83.	48.	19.	5.	0.	0.
SOUTHWEST	0.	0.	5.	19.	33.	45.	54.	70.	113.	146.	166.	169.	153.	114.	34.	0.	0.
WEST	0.	0.	5.	19.	33.	45.	54.	60.	62.	113.	155.	182.	188.	159.	54.	0.	0.
NORTHWEST	0.	0.	5.	19.	33.	45.	54.	60.	62.	60.	86.	115.	132.	122.	46.	0.	0.
NORTH	0.	0.	14.	25.	33.	45.	54.	60.	62.	60.	54.	45.	33.	25.	14.	0.	0.
NORTHEAST	0.	0.	46.	122.	132.	115.	86.	60.	62.	60.	54.	45.	33.	19.	5.	0.	0.
EAST	0.	0.	54.	159.	188.	182.	155.	113.	62.	60.	54.	45.	33.	19.	5.	0.	0.
SOUTHEAST	0.	0.	34.	114.	153.	169.	166.	146.	113.	70.	54.	45.	33.	19.	5.	0.	0.
SORTIZ.	0.	0.	14.	72.	135.	190.	233.	260.	270.	260.	233.	190.	135.	72.	14.	0.	0.
DAILY TOTAL RADIATION												923.	123.	168.	94.	118.	
SAG/DAYTIME SATGS												1121.	135.	189.	100.	130.	
SAG/ALL DAY SATGS												1130.	136.	190.	101.	130.	
DAILY TOTAL RADIATION												839.	118.	159.	91.	113.	
SAG/DAYTIME SATGS												524.	100.	125.	81.	95.	
SAG/ALL DAY SATGS												839.	118.	159.	91.	113.	
DAILY TOTAL RADIATION												1130.	136.	190.	101.	130.	
SAG/DAYTIME SATGS												1121.	135.	189.	100.	130.	
SAG/ALL DAY SATGS												2077.	192.	292.	131.	186.	

MONTH	5	HO	3629.	TOD	77.	TOT	73.	KT	.639	KD	.164										
HOURLY SOLAR RADIATION																					
ORIENTATION																					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH	0.	0.	9.	23.	36.	59.	86.	103.	109.	103.	86.	59.	36.	23.	9.	0.	741.	121.	155.	99.	118.
SOUTHWEST	0.	0.	9.	23.	36.	47.	56.	62.	65.	129.	149.	154.	142.	109.	52.	0.	1064.	141.	189.	110.	138.
WEST	0.	0.	9.	23.	36.	47.	56.	62.	63.	115.	158.	187.	194.	172.	97.	0.	1221.	150.	206.	115.	147.
NORTHWEST	0.	0.	9.	23.	36.	47.	56.	62.	63.	70.	107.	137.	154.	148.	91.	0.	1004.	137.	183.	108.	134.
NORTH	0.	0.	37.	50.	45.	47.	56.	62.	63.	62.	56.	47.	45.	50.	37.	0.	657.	116.	146.	96.	113.
NORTHEAST	0.	0.	91.	148.	154.	137.	107.	70.	63.	62.	56.	47.	36.	23.	9.	0.	1004.	137.	183.	108.	134.
EAST	0.	0.	97.	172.	194.	187.	158.	115.	63.	62.	56.	47.	36.	23.	9.	0.	1221.	150.	206.	115.	147.
SOUTHEAST	0.	0.	52.	109.	142.	154.	149.	129.	95.	62.	56.	47.	36.	23.	9.	0.	1064.	141.	189.	110.	138.
POLE.	0.	0.	30.	92.	154.	209.	252.	279.	288.	279.	252.	209.	154.	92.	30.	0.	2320.	215.	321.	153.	213.

MONTH	6	H0	3716.	TOD	84.	TOT	80.	HOURLY SOLAR RADIATION					KT					KD	.169				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
SOUTH	0.	0.	11.	24.	37.	49.	74.	90.	95.	90.	74.	49.	37.	24.	11.	0.	0.	667.	123.	152.	103.	120.	
SOUTHWEST	0.	0.	11.	24.	37.	48.	57.	62.	86.	117.	136.	141.	129.	100.	52.	0.	0.	1001.	142.	187.	114.	141.	
WEST	0.	0.	11.	24.	37.	48.	57.	62.	64.	112.	152.	178.	185.	165.	102.	0.	0.	1198.	154.	207.	121.	153.	
NORTHWEST	0.	0.	11.	24.	37.	48.	57.	62.	64.	78.	112.	139.	154.	148.	99.	0.	0.	1034.	144.	190.	115.	143.	
NORTH	0.	0.	45.	58.	55.	48.	57.	62.	64.	62.	57.	48.	55.	58.	45.	0.	0.	713.	125.	157.	104.	123.	
NORTHEAST	0.	0.	99.	148.	154.	139.	112.	78.	64.	62.	57.	48.	37.	24.	11.	0.	0.	1034.	144.	190.	115.	143.	
EAST	0.	0.	102.	165.	185.	178.	152.	112.	64.	62.	57.	48.	37.	24.	11.	0.	0.	1198.	154.	207.	121.	153.	
SOUTHEAST	0.	0.	52.	100.	129.	141.	136.	117.	86.	62.	57.	48.	37.	24.	11.	0.	0.	1001.	142.	187.	114.	141.	
SORTZ.	0.	1.	36.	95.	155.	207.	248.	273.	282.	273.	248.	207.	155.	95.	36.	1.	0.	2311.	218.	322.	159.	220.	

## LOCATION MIDLAND, TEXAS

LATITUDE 31 DEGREES 55 MINUTES

MONTH	7	HO	3623.	TON	86.	TOT	82.	KT	.628	KD	.167						
ORIENTATION																	
HOURLY SOLAR RADIATION																	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	10.	23.	36.	58.	84.	101.	107.	101.	84.	58.	36.	23.	10.	0.	0.
SOUTHWEST	0.	0.	10.	23.	36.	47.	56.	61.	94.	126.	146.	150.	137.	105.	49.	0.	0.
WEST	0.	0.	10.	23.	36.	47.	56.	61.	63.	114.	155.	182.	188.	166.	91.	0.	0.
NORTHWEST	0.	0.	10.	23.	36.	47.	56.	61.	63.	71.	106.	135.	150.	143.	86.	0.	0.
NORTH	0.	0.	35.	49.	45.	47.	56.	61.	63.	61.	56.	47.	45.	49.	35.	0.	0.
NORTHEAST	0.	0.	86.	143.	150.	135.	106.	71.	63.	61.	56.	47.	36.	23.	10.	0.	0.
EAST	0.	0.	91.	166.	188.	182.	155.	114.	63.	61.	56.	47.	36.	23.	10.	0.	0.
SOUTHEAST	0.	0.	49.	105.	137.	150.	146.	126.	94.	61.	56.	47.	36.	23.	10.	0.	0.
HORIZ.	0.	0.	29.	90.	151.	205.	247.	274.	283.	274.	247.	205.	151.	90.	29.	0.	0.
DAILY TOTAL RADIATION												730.	129.	162.	107.	126.	
SAG/DAYTIME SAT6S												1041.	148.	195.	118.	145.	
SAG/ALL DAY SAT6S												1193.	157.	211.	123.	154.	
DAILY TOTAL RADIATION												987.	144.	189.	116.	142.	
SAG/DAYTIME SAT6S												653.	125.	154.	104.	121.	
SAG/ALL DAY SAT6S												987.	144.	189.	116.	142.	
DAILY TOTAL RADIATION												1193.	157.	211.	123.	154.	
SAG/DAYTIME SAT6S												1041.	148.	195.	118.	145.	
SAG/ALL DAY SAT6S												2276.	221.	325.	160.	219.	



LOCATION		MIDLAND, TEXAS		LATITUDE 31 DEGREES 55 MINUTES																			
MONTH 10		HO 2341.	TOO 70.	TOT 67.	HOURLY SOLAR RADIATION										KT .600	KD .174							
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH		0.	0.	0.	26.	86.	131.	164.	185.	192.	185.	164.	131.	86.	26.	0.	0.	0.	1374.	166.	244.	111.	147.
SOUTHWEST		0.	0.	0.	6.	20.	32.	58.	107.	150.	182.	198.	194.	161.	64.	0.	0.	0.	1174.	152.	218.	104.	135.
WEST		0.	0.	0.	6.	20.	32.	42.	48.	50.	100.	141.	163.	154.	69.	0.	0.	0.	823.	127.	174.	93.	115.
NORTHWEST		0.	0.	0.	6.	20.	32.	42.	48.	50.	48.	42.	55.	68.	37.	0.	0.	0.	446.	101.	127.	81.	93.
NORTH		0.	0.	0.	6.	20.	32.	42.	48.	50.	48.	42.	32.	20.	6.	0.	0.	0.	345.	94.	114.	78.	87.
NORTHEAST		0.	0.	0.	37.	68.	55.	42.	48.	50.	48.	42.	32.	20.	6.	0.	0.	0.	446.	101.	127.	81.	93.
EAST		0.	0.	0.	69.	154.	163.	141.	100.	50.	48.	42.	32.	20.	6.	0.	0.	0.	823.	127.	174.	93.	115.
SOUTHEAST		0.	0.	0.	64.	161.	194.	182.	150.	107.	58.	32.	20.	6.	0.	0.	0.	0.	1174.	152.	218.	104.	135.
HORIZ.		0.	0.	0.	17.	75.	130.	174.	202.	211.	202.	174.	130.	75.	17.	0.	0.	0.	1406.	168.	248.	112.	148.
MONTH 11		HO 1853.	TOO 57.	TOT 53.	KT .609										KD .172								
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH		0.	0.	0.	2.	89.	146.	185.	207.	215.	207.	185.	146.	89.	2.	0.	0.	0.	1473.	167.	257.	100.	139.
SOUTHWEST		0.	0.	0.	1.	13.	25.	71.	121.	164.	196.	210.	200.	148.	2.	0.	0.	0.	1152.	143.	214.	90.	120.
WEST		0.	0.	0.	1.	13.	25.	34.	40.	42.	93.	132.	151.	128.	2.	0.	0.	0.	663.	106.	147.	74.	91.
NORTHWEST		0.	0.	0.	1.	13.	25.	34.	40.	42.	40.	34.	28.	41.	2.	0.	0.	0.	302.	79.	98.	62.	70.
NORTH		0.	0.	0.	1.	13.	25.	34.	40.	42.	40.	34.	25.	13.	1.	0.	0.	0.	271.	77.	94.	62.	69.
NORTHEAST		0.	0.	0.	2.	41.	28.	34.	40.	42.	40.	34.	25.	13.	1.	0.	0.	0.	302.	79.	98.	62.	70.
EAST		0.	0.	0.	2.	128.	151.	132.	93.	42.	40.	34.	25.	13.	1.	0.	0.	0.	663.	106.	147.	74.	91.
SOUTHEAST		0.	0.	0.	2.	148.	200.	210.	196.	164.	121.	71.	25.	13.	1.	0.	0.	0.	1152.	143.	214.	90.	120.
HORIZ.		0.	0.	0.	2.	48.	102.	146.	174.	183.	174.	146.	102.	48.	2.	0.	0.	0.	1127.	141.	210.	89.	118.
MONTH 12		HO 1662.	TOO 49.	TOT 45.	KT .611										KD .171								
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH		0.	0.	0.	0.	86.	150.	191.	214.	222.	214.	191.	150.	86.	0.	0.	0.	0.	1503.	166.	261.	94.	133.
SOUTHWEST		0.	0.	0.	0.	11.	27.	76.	126.	169.	199.	212.	199.	136.	0.	0.	0.	0.	1154.	139.	212.	82.	113.
WEST		0.	0.	0.	0.	11.	22.	31.	37.	39.	89.	128.	144.	113.	0.	0.	0.	0.	616.	97.	136.	65.	81.
NORTHWEST		0.	0.	0.	0.	11.	22.	31.	37.	39.	37.	31.	22.	30.	0.	0.	0.	0.	262.	69.	86.	54.	61.
NORTH		0.	0.	0.	0.	11.	22.	31.	37.	39.	37.	31.	22.	11.	0.	0.	0.	0.	243.	68.	83.	53.	60.
NORTHEAST		0.	0.	0.	0.	30.	22.	31.	37.	39.	37.	31.	22.	11.	0.	0.	0.	0.	262.	69.	86.	54.	61.
EAST		0.	0.	0.	0.	113.	144.	128.	89.	39.	37.	31.	22.	11.	0.	0.	0.	0.	616.	97.	136.	65.	81.
SOUTHEAST		0.	0.	0.	0.	136.	199.	212.	199.	164.	126.	76.	27.	11.	0.	0.	0.	0.	1154.	139.	212.	82.	113.
HORIZ.		0.	0.	0.	0.	37.	90.	134.	161.	171.	161.	134.	90.	37.	0.	0.	0.	0.	1015.	124.	192.	78.	105.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	153.	148.	141.	123.	121.	123.	129.	144.	164.	166.	167.	166.	146.
SOUTHWEST	131.	135.	139.	135.	141.	142.	148.	157.	162.	152.	143.	139.	144.
WEST	96.	111.	126.	136.	150.	154.	157.	158.	149.	127.	106.	97.	131.
NORTHWEST	71.	85.	101.	118.	137.	144.	144.	138.	122.	101.	79.	69.	109.
NORTH	68.	87.	100.	100.	116.	125.	125.	118.	107.	94.	77.	68.	97.
NORTHEAST	71.	85.	101.	118.	137.	144.	144.	138.	122.	101.	79.	69.	109.
EAST	96.	111.	126.	136.	150.	154.	157.	158.	149.	127.	106.	97.	131.
SOUTHEAST	131.	135.	139.	135.	141.	142.	148.	157.	162.	152.	143.	139.	144.
HORIZ.	130.	151.	178.	192.	215.	218.	221.	220.	205.	168.	141.	128.	181.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	239.	225.	207.	168.	155.	152.	162.	190.	229.	244.	257.	261.	208.
SOUTHWEST	198.	201.	204.	189.	189.	187.	195.	213.	226.	218.	214.	212.	204.
WEST	136.	158.	181.	190.	206.	207.	211.	213.	202.	174.	147.	136.	180.
NORTHWEST	89.	110.	135.	159.	183.	190.	189.	179.	155.	127.	98.	86.	142.
NORTH	85.	97.	109.	125.	146.	157.	154.	143.	129.	114.	84.	83.	120.
NORTHEAST	89.	110.	135.	159.	183.	190.	189.	179.	155.	127.	98.	86.	142.
EAST	136.	158.	181.	190.	206.	207.	211.	213.	202.	174.	147.	136.	180.
SOUTHEAST	198.	201.	204.	189.	189.	187.	195.	213.	226.	218.	214.	212.	204.
HORIZ.	197.	231.	275.	292.	321.	322.	325.	324.	301.	248.	210.	192.	270.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	89.	93.	96.	94.	90.	103.	107.	114.	118.	111.	100.	94.	101.
SOUTHWEST	80.	87.	95.	100.	110.	114.	118.	121.	117.	104.	90.	82.	102.
WEST	65.	76.	89.	101.	115.	121.	123.	121.	110.	93.	74.	65.	96.
NORTHWEST	54.	64.	76.	91.	108.	115.	116.	110.	97.	81.	62.	54.	86.
NORTH	53.	60.	69.	81.	96.	104.	104.	99.	90.	78.	62.	53.	79.
NORTHEAST	54.	64.	76.	91.	108.	115.	116.	110.	97.	81.	62.	54.	86.
EAST	65.	76.	89.	101.	115.	121.	123.	121.	110.	93.	74.	65.	96.
SOUTHEAST	80.	87.	95.	100.	110.	114.	118.	121.	117.	104.	90.	82.	102.
HORIZ.	79.	94.	115.	131.	153.	159.	160.	155.	139.	112.	89.	78.	122.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	126.	129.	129.	118.	118.	120.	126.	138.	151.	147.	139.	133.	131.
SOUTHWEST	109.	118.	128.	130.	138.	141.	145.	151.	149.	135.	120.	113.	131.
WEST	82.	98.	116.	130.	147.	153.	154.	151.	137.	115.	91.	81.	121.
NORTHWEST	62.	76.	93.	113.	134.	143.	142.	132.	114.	93.	70.	61.	103.
NORTH	60.	69.	80.	95.	113.	123.	121.	113.	101.	87.	69.	60.	91.
NORTHEAST	62.	76.	93.	113.	134.	143.	142.	132.	114.	93.	70.	61.	103.
EAST	82.	98.	116.	130.	147.	153.	154.	151.	137.	115.	91.	81.	121.
SOUTHEAST	109.	118.	128.	130.	138.	141.	145.	151.	149.	135.	120.	113.	131.
HORIZ.	108.	132.	163.	186.	213.	220.	219.	211.	187.	148.	118.	105.	168.

LOCATION		NASHVILLE, TENNESSEE		LATITUDE		36 DEGREES		7 MNUTES													
MONTH	1	H0	1642.	T00	43.	T0T	40.	KT	.373	KD	.182										
ORIENTATION																					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD
SOUTH	0.	0.	0.	0.	41.	74.	96.	109.	113.	109.	96.	74.	41.	0.	0.	0.	752.	101.	148.	64.	84.
SOUTHWEST	0.	0.	0.	0.	10.	20.	45.	70.	90.	103.	106.	96.	64.	0.	0.	0.	603.	99.	127.	59.	75.
WEST	0.	0.	0.	0.	10.	20.	27.	32.	33.	55.	70.	74.	56.	0.	0.	0.	375.	72.	95.	52.	62.
NORTHWEST	0.	0.	0.	0.	10.	20.	27.	32.	33.	32.	27.	20.	10.	0.	0.	0.	220.	60.	73.	47.	53.
NORTH	0.	0.	0.	0.	10.	20.	27.	32.	33.	32.	27.	20.	10.	0.	0.	0.	209.	59.	72.	47.	52.
NORTHEAST	0.	0.	0.	0.	20.	27.	32.	33.	32.	27.	20.	10.	0.	0.	0.	0.	220.	60.	73.	47.	53.
EAST	0.	0.	0.	0.	56.	74.	70.	55.	33.	32.	27.	20.	10.	0.	0.	0.	375.	72.	95.	52.	62.
SOUTHEAST	0.	0.	0.	0.	64.	96.	106.	103.	90.	70.	45.	20.	10.	0.	0.	0.	603.	89.	127.	59.	75.
HORIZ.	0.	0.	0.	0.	25.	55.	80.	95.	100.	95.	80.	55.	25.	0.	0.	0.	611.	90.	128.	59.	75.
MONTH	2	H0	2184.	T00	45.	T0T	42.	KT	.440	KD	.185										
ORIENTATION																					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD
SOUTH	0.	0.	0.	16.	58.	91.	115.	129.	134.	129.	115.	91.	58.	16.	0.	0.	953.	112.	167.	73.	98.
SOUTHWEST	0.	0.	0.	5.	17.	28.	50.	81.	108.	126.	134.	128.	103.	37.	0.	0.	817.	102.	149.	69.	90.
WEST	0.	0.	0.	5.	17.	28.	36.	41.	43.	73.	96.	106.	98.	39.	0.	0.	583.	86.	119.	61.	76.
NORTHWEST	0.	0.	0.	5.	17.	28.	36.	41.	43.	41.	36.	39.	45.	22.	0.	0.	354.	70.	90.	54.	63.
NORTH	0.	0.	0.	5.	17.	28.	36.	41.	43.	41.	36.	28.	17.	5.	0.	0.	299.	66.	83.	52.	60.
NORTHEAST	0.	0.	0.	22.	45.	39.	36.	41.	43.	41.	36.	28.	17.	5.	0.	0.	354.	70.	90.	54.	63.
EAST	0.	0.	0.	39.	98.	106.	96.	73.	43.	41.	36.	28.	17.	5.	0.	0.	583.	86.	119.	61.	76.
SOUTHEAST	0.	0.	0.	37.	103.	128.	134.	126.	108.	81.	50.	28.	17.	5.	0.	0.	817.	102.	149.	69.	90.
HORIZ.	0.	0.	0.	12.	52.	89.	119.	137.	144.	137.	119.	89.	52.	12.	0.	0.	962.	113.	168.	73.	98.
MONTH	3	H0	2762.	T00	53.	T0T	50.	KT	.472	KD	.187										
ORIENTATION																					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD
SOUTH	0.	0.	0.	24.	58.	88.	112.	127.	132.	127.	112.	88.	58.	24.	0.	0.	953.	114.	164.	80.	105.
SOUTHWEST	0.	0.	0.	12.	25.	36.	45.	79.	109.	130.	140.	137.	118.	76.	0.	0.	906.	111.	158.	79.	103.
WEST	0.	0.	0.	12.	25.	36.	44.	50.	52.	85.	111.	126.	124.	90.	0.	0.	756.	101.	141.	74.	94.
NORTHWEST	0.	0.	0.	12.	25.	36.	44.	50.	52.	50.	44.	36.	25.	12.	0.	0.	506.	85.	112.	66.	79.
NORTH	0.	0.	0.	12.	25.	36.	44.	50.	52.	50.	44.	36.	25.	12.	0.	0.	387.	78.	98.	62.	72.
NORTHEAST	0.	0.	0.	59.	71.	63.	44.	50.	52.	50.	44.	36.	25.	12.	0.	0.	506.	85.	112.	66.	79.
EAST	0.	0.	0.	90.	124.	126.	111.	85.	52.	50.	44.	36.	25.	12.	0.	0.	756.	101.	141.	74.	94.
SOUTHEAST	0.	0.	0.	76.	118.	137.	140.	130.	109.	79.	45.	36.	25.	12.	0.	0.	906.	111.	158.	79.	103.
SORIZ.	0.	0.	0.	35.	80.	121.	153.	172.	179.	172.	153.	121.	80.	35.	0.	0.	1302.	136.	204.	92.	126.

LOCATION NASHVILLE, TENNESSEE LATITUDE 36 DEGREES 7 MINUTES

MONTH	4	HO	3306.	TOD	63.	TOT	60.	KT	514	KD	186						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	6.	19.	48.	78.	102.	118.	123.	118.	102.	78.	48.	19.	6.	0.	0.
SOUTHWEST	0.	0.	6.	19.	32.	43.	52.	72.	104.	128.	140.	140.	124.	91.	31.	0.	0.
WEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	96.	126.	144.	146.	123.	49.	0.	0.
NORTHWEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	57.	68.	90.	101.	94.	42.	0.	0.
NORTH	0.	0.	14.	21.	32.	43.	52.	57.	59.	57.	52.	43.	32.	21.	14.	0.	0.
NORTHEAST	0.	0.	42.	94.	101.	90.	68.	57.	59.	57.	52.	43.	32.	19.	6.	0.	0.
EAST	0.	0.	49.	123.	146.	144.	126.	96.	59.	57.	52.	43.	32.	19.	6.	0.	0.
SOUTHEAST	0.	0.	31.	91.	124.	140.	140.	128.	104.	72.	52.	43.	32.	19.	6.	0.	0.
HORIZ.	0.	0.	15.	62.	112.	155.	148.	210.	217.	210.	148.	155.	112.	62.	15.	0.	0.

MONTH	5	HO	3633.	TOD	71.	TOT	68.	KT	556	KD	180						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	11.	24.	36.	65.	89.	105.	110.	105.	89.	65.	36.	24.	11.	0.	0.
SOUTHWEST	0.	0.	11.	24.	36.	47.	55.	62.	96.	122.	137.	138.	125.	96.	50.	0.	0.
WEST	0.	0.	11.	24.	36.	47.	55.	60.	62.	103.	136.	157.	162.	145.	89.	0.	0.
NORTHWEST	0.	0.	11.	24.	36.	47.	55.	60.	62.	60.	88.	112.	126.	122.	83.	0.	0.
NORTH	0.	0.	34.	42.	37.	47.	55.	60.	62.	60.	55.	47.	37.	42.	34.	0.	0.
NORTHEAST	0.	0.	83.	122.	126.	112.	88.	60.	62.	60.	55.	47.	36.	24.	11.	0.	0.
EAST	0.	0.	89.	145.	162.	157.	136.	103.	62.	60.	55.	47.	36.	24.	11.	0.	0.
SOUTHEAST	0.	0.	50.	96.	125.	138.	137.	122.	96.	62.	55.	47.	36.	24.	11.	0.	0.
HORIZ.	0.	1.	33.	84.	136.	181.	216.	237.	245.	237.	216.	181.	136.	84.	33.	1.	0.

MONTH	6	HO	3746.	TOD	80.	TOT	77.	KT	573	KD	.178						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	2.	13.	25.	37.	59.	83.	98.	103.	98.	83.	59.	37.	25.	13.	2.	0.
SOUTHWEST	0.	2.	13.	25.	37.	48.	56.	61.	91.	118.	134.	136.	123.	96.	53.	3.	0.
WEST	0.	2.	13.	25.	37.	48.	56.	61.	63.	105.	139.	161.	167.	151.	101.	4.	0.
NORTHWEST	0.	2.	13.	25.	37.	48.	56.	61.	63.	66.	96.	121.	135.	133.	97.	4.	0.
NORTH	0.	3.	44.	51.	46.	48.	56.	61.	63.	61.	56.	44.	46.	51.	44.	3.	0.
NORTHEAST	0.	4.	97.	133.	135.	121.	96.	66.	63.	61.	56.	44.	37.	25.	13.	2.	0.
EAST	0.	4.	101.	151.	167.	161.	139.	105.	63.	61.	56.	44.	37.	25.	13.	2.	0.
SOUTHEAST	0.	3.	53.	96.	123.	136.	134.	118.	91.	61.	56.	44.	37.	25.	13.	2.	0.
HORIZ.	0.	3.	40.	93.	145.	190.	226.	249.	256.	248.	226.	190.	145.	93.	40.	3.	0.



LOCATION	NASHVILLE, TENNESSEE				LATITUDE				36 DEGREES				7 MINUTES									
MONTH	7	HO	3628.	TOD	83.	TOT	80.	KT	.565	KD	.179											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SATGS	SAG/ALL DAY SATGD
SOUTH	0.	0.	11.	24.	36.	65.	90.	106.	111.	106.	90.	65.	36.	24.	11.	0.	0.	776.	128.	163.	107.	127.
SOUTHWEST	0.	0.	11.	24.	36.	47.	55.	61.	97.	123.	138.	140.	126.	97.	49.	0.	0.	1006.	142.	187.	114.	141.
WEST	0.	0.	11.	24.	36.	47.	55.	60.	62.	104.	138.	160.	165.	146.	89.	0.	0.	1097.	147.	196.	118.	146.
NORTHWEST	0.	0.	11.	24.	36.	47.	55.	60.	62.	60.	89.	114.	128.	124.	82.	0.	0.	892.	135.	175.	111.	134.
NORTH	0.	0.	34.	43.	37.	47.	55.	60.	62.	60.	55.	47.	37.	43.	34.	0.	0.	615.	119.	146.	101.	117.
NORTHEAST	0.	0.	82.	124.	128.	114.	89.	60.	62.	60.	55.	47.	36.	24.	11.	0.	0.	892.	135.	175.	111.	134.
EAST	0.	0.	89.	146.	165.	160.	138.	104.	62.	60.	55.	47.	36.	24.	11.	0.	0.	1097.	147.	196.	118.	146.
SOUTHEAST	0.	0.	49.	97.	126.	140.	138.	123.	97.	61.	55.	47.	36.	24.	11.	0.	0.	1006.	142.	187.	114.	141.
HORIZ.	0.	1.	33.	85.	137.	183.	219.	242.	249.	242.	219.	183.	137.	85.	33.	1.	0.	2049.	202.	294.	150.	204.
MONTH	8	HO	3281.	TOD	82.	TOT	79.	KT	.554	KD	.180											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SATGS	SAG/ALL DAY SATGD
SOUTH	0.	0.	6.	19.	50.	83.	109.	126.	132.	126.	109.	83.	50.	19.	6.	0.	0.	918.	139.	183.	110.	134.
SOUTHWEST	0.	0.	6.	19.	32.	43.	52.	74.	110.	137.	152.	152.	135.	98.	31.	0.	0.	1042.	147.	196.	114.	142.
WEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	102.	136.	157.	160.	133.	49.	0.	0.	1005.	144.	192.	113.	139.
NORTHWEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	57.	71.	96.	109.	101.	41.	0.	0.	745.	128.	164.	104.	124.
NORTH	0.	0.	14.	22.	32.	43.	52.	57.	59.	57.	52.	43.	32.	22.	14.	0.	0.	498.	113.	137.	96.	109.
NORTHEAST	0.	0.	41.	101.	109.	96.	71.	57.	59.	57.	52.	43.	32.	19.	6.	0.	0.	745.	128.	164.	104.	124.
EAST	0.	0.	49.	133.	160.	157.	136.	102.	59.	57.	52.	43.	32.	19.	6.	0.	0.	1005.	144.	192.	113.	139.
SOUTHEAST	0.	0.	31.	98.	135.	152.	152.	137.	110.	74.	52.	43.	32.	19.	6.	0.	0.	1042.	147.	196.	114.	142.
HORIZ.	0.	0.	15.	65.	118.	166.	203.	226.	234.	226.	203.	166.	118.	65.	15.	0.	0.	1819.	195.	282.	141.	189.
MONTH	9	HO	2747.	TOD	77.	TOT	73.	KT	.556	KD	.180											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SATGS	SAG/ALL DAY SATGD
SOUTH	0.	0.	0.	27.	67.	105.	134.	152.	159.	152.	134.	105.	67.	27.	0.	0.	0.	1130.	154.	212.	112.	141.
SOUTHWEST	0.	0.	0.	12.	26.	37.	46.	90.	128.	156.	170.	168.	145.	90.	0.	0.	0.	1069.	149.	205.	110.	138.
WEST	0.	0.	0.	12.	26.	37.	46.	52.	53.	98.	134.	154.	152.	108.	0.	0.	0.	873.	136.	182.	103.	126.
NORTHWEST	0.	0.	0.	12.	26.	37.	46.	52.	53.	52.	46.	72.	86.	70.	0.	0.	0.	552.	114.	143.	92.	107.
NORTH	0.	0.	0.	12.	26.	37.	46.	52.	53.	52.	46.	37.	26.	12.	0.	0.	0.	399.	104.	125.	87.	97.
NORTHEAST	0.	0.	0.	70.	86.	72.	46.	52.	53.	52.	46.	37.	26.	12.	0.	0.	0.	552.	114.	143.	92.	107.
EAST	0.	0.	0.	108.	152.	154.	134.	98.	53.	52.	46.	37.	26.	12.	0.	0.	0.	873.	136.	182.	103.	126.
SOUTHEAST	0.	0.	0.	90.	145.	168.	170.	156.	128.	90.	46.	37.	26.	12.	0.	0.	0.	1069.	149.	205.	110.	138.
HORIZ.	0.	0.	1.	38.	93.	142.	180.	204.	212.	204.	180.	142.	93.	38.	1.	0.	0.	1526.	180.	260.	125.	165.

LOCATION	NASHVILLE, TENNESSEE										LATITUDE 36 DEGREES 7 MINUTES													
MONTH 10	HO 2149. TOD 65. TOT 62. KT .540 KD .182																							
ORIENTATION	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION										SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD			
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	1224.	152.	222.	101.	133.			
SOUTH	0.	0.	0.	18.	74.	117.	148.	168.	175.	168.	148.	117.	74.	18.	0.	0.	1028.	138.	197.	95.	122.			
SOUTHWEST	0.	0.	0.	5.	18.	29.	57.	100.	137.	163.	175.	168.	134.	42.	0.	0.	697.	114.	155.	84.	102.			
WEST	0.	0.	0.	5.	18.	29.	38.	44.	46.	48.	121.	138.	126.	44.	0.	0.	384.	92.	114.	74.	84.			
NORTHWEST	0.	0.	0.	5.	18.	29.	38.	44.	46.	44.	38.	44.	55.	24.	0.	0.	313.	87.	105.	72.	80.			
NORTH	0.	0.	0.	5.	18.	29.	38.	44.	46.	44.	38.	29.	18.	5.	0.	0.	384.	92.	114.	74.	84.			
NORTHEAST	0.	0.	0.	24.	55.	44.	38.	44.	46.	44.	38.	29.	18.	5.	0.	0.	697.	114.	155.	84.	102.			
EAST	0.	0.	0.	44.	126.	138.	121.	88.	46.	44.	38.	29.	18.	5.	0.	0.	1028.	138.	197.	95.	122.			
SOUTHEAST	0.	0.	0.	42.	134.	168.	175.	163.	137.	100.	57.	29.	18.	5.	0.	0.	1161.	147.	214.	99.	129.			
HORIZ.	0.	0.	0.	12.	60.	107.	145.	168.	176.	168.	145.	107.	60.	12.	0.	0.								
MONTH 11	HO 1630. TOD 52. TOT 49. KT .454 KD .186																							
ORIENTATION	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION										SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD			
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	983.	128.	190.	81.	107.			
SOUTH	0.	0.	0.	53.	97.	125.	143.	148.	143.	125.	97.	53.	0.	0.	0.	0.	775.	112.	161.	74.	94.			
SOUTHWEST	0.	0.	0.	10.	21.	55.	88.	115.	134.	140.	128.	85.	0.	0.	0.	0.	454.	87.	116.	64.	76.			
WEST	0.	0.	0.	10.	21.	29.	34.	36.	67.	89.	96.	73.	0.	0.	0.	0.	238.	71.	86.	57.	63.			
NORTHWEST	0.	0.	0.	10.	21.	29.	34.	36.	34.	29.	21.	25.	0.	0.	0.	0.	224.	70.	84.	56.	62.			
NORTH	0.	0.	0.	10.	21.	29.	34.	36.	34.	29.	21.	10.	0.	0.	0.	0.	238.	71.	86.	57.	63.			
NORTHEAST	0.	0.	0.	25.	21.	29.	34.	36.	34.	29.	21.	10.	0.	0.	0.	0.	454.	87.	116.	64.	76.			
EAST	0.	0.	0.	73.	96.	89.	67.	36.	34.	29.	21.	10.	0.	0.	0.	0.	775.	112.	161.	74.	94.			
SOUTHEAST	0.	0.	0.	85.	128.	140.	134.	115.	88.	55.	21.	10.	0.	0.	0.	0.	738.	109.	156.	73.	92.			
HORIZ.	0.	0.	0.	29.	66.	97.	116.	123.	116.	97.	66.	29.	0.	0.	0.	0.								
MONTH 12	HO 1430. TOD 44. TOT 42. KT .426 KD .184																							
ORIENTATION	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION										SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD			
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	894.	116.	175.	70.	94.			
SOUTH	0.	0.	0.	42.	88.	116.	133.	138.	133.	116.	88.	42.	0.	0.	0.	0.	697.	101.	146.	64.	82.			
SOUTHWEST	0.	0.	0.	8.	21.	52.	82.	107.	123.	127.	113.	64.	0.	0.	0.	0.	385.	75.	101.	54.	64.			
WEST	0.	0.	0.	8.	18.	25.	30.	32.	59.	78.	82.	53.	0.	0.	0.	0.	201.	61.	74.	48.	53.			
NORTHWEST	0.	0.	0.	8.	18.	25.	30.	32.	30.	25.	18.	16.	0.	0.	0.	0.	193.	60.	73.	48.	53.			
NORTH	0.	0.	0.	8.	18.	25.	30.	32.	30.	25.	18.	8.	0.	0.	0.	0.	201.	61.	74.	48.	53.			
NORTHEAST	0.	0.	0.	16.	18.	25.	30.	32.	30.	25.	18.	8.	0.	0.	0.	0.	385.	75.	101.	54.	64.			
EAST	0.	0.	0.	53.	82.	78.	59.	32.	30.	25.	18.	8.	0.	0.	0.	0.	697.	101.	146.	64.	82.			
SOUTHEAST	0.	0.	0.	64.	113.	127.	123.	107.	82.	52.	21.	8.	0.	0.	0.	0.	610.	94.	134.	61.	77.			
HORIZ.	0.	0.	0.	19.	53.	81.	99.	105.	99.	81.	53.	19.	0.	0.	0.	0.								

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	101.	112.	114.	114.	116.	122.	128.	139.	154.	152.	128.	116.	125.
SOUTHWEST	89.	102.	111.	120.	130.	137.	142.	147.	149.	138.	112.	101.	123.
WEST	72.	86.	101.	119.	135.	144.	147.	144.	136.	114.	87.	75.	113.
NORTHWEST	60.	70.	85.	105.	123.	134.	135.	128.	114.	92.	71.	61.	98.
NORTH	59.	66.	78.	92.	107.	119.	119.	113.	104.	87.	70.	60.	89.
NORTHEAST	60.	70.	85.	105.	123.	134.	135.	128.	114.	92.	71.	61.	98.
EAST	72.	86.	101.	119.	135.	144.	147.	144.	136.	114.	87.	75.	113.
SOUTHEAST	89.	102.	111.	120.	130.	137.	142.	147.	149.	138.	112.	101.	123.
HORIZ.	90.	113.	136.	162.	189.	202.	202.	195.	180.	147.	109.	94.	152.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	148.	167.	164.	155.	151.	154.	163.	183.	212.	222.	190.	175.	174.
SOUTHWEST	127.	149.	158.	167.	174.	180.	187.	196.	205.	197.	161.	146.	171.
WEST	95.	119.	141.	164.	183.	194.	196.	192.	182.	155.	116.	101.	153.
NORTHWEST	73.	90.	112.	139.	163.	176.	175.	164.	143.	114.	86.	74.	126.
NORTH	72.	83.	98.	116.	134.	148.	146.	137.	125.	105.	84.	73.	110.
NORTHEAST	73.	90.	112.	139.	163.	176.	175.	164.	143.	114.	86.	74.	126.
EAST	95.	119.	141.	164.	183.	194.	196.	192.	182.	155.	116.	101.	153.
SOUTHEAST	127.	149.	158.	167.	174.	180.	187.	196.	205.	197.	161.	146.	171.
HORIZ.	128.	168.	204.	243.	279.	295.	294.	282.	260.	214.	156.	134.	221.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	64.	73.	80.	88.	95.	102.	107.	110.	112.	101.	81.	70.	90.
SOUTHWEST	59.	69.	79.	91.	102.	111.	114.	114.	110.	95.	74.	64.	90.
WEST	52.	61.	74.	90.	105.	116.	118.	113.	103.	84.	64.	54.	86.
NORTHWEST	47.	54.	66.	83.	98.	110.	111.	104.	92.	74.	57.	48.	79.
NORTH	47.	52.	62.	76.	89.	100.	101.	96.	87.	72.	56.	48.	74.
NORTHEAST	47.	54.	66.	83.	98.	110.	111.	104.	92.	74.	57.	48.	79.
EAST	52.	61.	74.	90.	105.	116.	118.	113.	103.	84.	64.	54.	86.
SOUTHEAST	59.	69.	79.	91.	102.	111.	114.	114.	110.	95.	74.	64.	90.
HORIZ.	59.	73.	92.	114.	137.	150.	150.	141.	125.	99.	73.	61.	106.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	84.	98.	105.	110.	115.	121.	127.	134.	141.	133.	107.	94.	114.
SOUTHWEST	75.	90.	103.	117.	129.	137.	141.	142.	138.	122.	94.	82.	114.
WEST	62.	76.	94.	115.	134.	145.	146.	139.	126.	102.	76.	64.	107.
NORTHWEST	53.	63.	79.	102.	122.	135.	134.	124.	107.	84.	63.	53.	93.
NORTH	52.	60.	72.	89.	105.	118.	117.	109.	97.	80.	62.	53.	85.
NORTHEAST	53.	63.	79.	102.	122.	135.	134.	124.	107.	84.	63.	53.	93.
EAST	62.	76.	94.	115.	134.	145.	146.	139.	126.	102.	76.	64.	107.
SOUTHEAST	75.	90.	103.	117.	129.	137.	141.	142.	138.	122.	94.	82.	114.
HORIZ.	75.	98.	126.	159.	190.	207.	204.	189.	165.	129.	92.	77.	143.

LOCATION NEW PORT, RHODE ISLAND LATITUDE 41 DEGREES 28 MINUTES

MONTH	1	HO	1348.	TON	29.	TOT	29.	KT	438	KD	.185						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	39.	89.	120.	138.	144.	138.	120.	80.	39.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	7.	19.	52.	84.	111.	128.	132.	116.	63.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	7.	17.	24.	29.	30.	60.	81.	85.	54.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	7.	17.	24.	29.	30.	29.	24.	17.	17.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	7.	17.	24.	29.	30.	29.	24.	17.	7.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	17.	17.	24.	29.	30.	29.	24.	17.	7.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	54.	85.	81.	60.	30.	29.	24.	17.	7.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	63.	116.	132.	128.	111.	84.	52.	19.	7.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	18.	51.	79.	96.	102.	96.	79.	51.	18.	0.	0.	0.	0.

MONTH	2	HO	1922.	TOO	32.	TOT	29.	KT	482	KD	.187						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	11.	63.	103.	132.	150.	156.	150.	132.	103.	63.	11.	0.	0.	0.
SOUTHWEST	0.	0.	0.	4.	15.	25.	54.	91.	122.	143.	152.	144.	111.	25.	0.	0.	0.
WEST	0.	0.	0.	4.	15.	25.	33.	39.	40.	75.	102.	115.	103.	26.	0.	0.	0.
NORTHWEST	0.	0.	0.	4.	15.	25.	33.	39.	40.	39.	33.	34.	44.	15.	0.	0.	0.
NORTH	0.	0.	0.	4.	15.	25.	33.	39.	40.	39.	33.	25.	15.	4.	0.	0.	0.
NORTHEAST	0.	0.	0.	15.	44.	34.	33.	39.	40.	39.	33.	25.	15.	4.	0.	0.	0.
EAST	0.	0.	0.	26.	103.	115.	102.	75.	40.	39.	33.	25.	15.	4.	0.	0.	0.
SOUTHEAST	0.	0.	0.	25.	111.	144.	152.	143.	122.	91.	54.	25.	15.	4.	0.	0.	0.
HORIZ.	0.	0.	0.	8.	47.	86.	116.	136.	142.	136.	116.	86.	47.	8.	0.	0.	0.

MONTH	3	HO	2565.	TON	40.	TOT	37.	KT	507	KD	.187						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	26.	65.	101.	128.	146.	152.	146.	128.	101.	65.	26.	0.	0.	0.
SOUTHWEST	0.	0.	0.	12.	24.	34.	50.	89.	122.	145.	156.	153.	131.	81.	0.	0.	0.
WEST	0.	0.	0.	12.	24.	34.	42.	48.	49.	88.	118.	135.	133.	96.	0.	0.	0.
NORTHWEST	0.	0.	0.	12.	24.	34.	42.	48.	49.	48.	42.	59.	72.	61.	0.	0.	0.
NORTH	0.	0.	0.	12.	24.	34.	42.	48.	49.	48.	42.	34.	24.	12.	0.	0.	0.
NORTHEAST	0.	0.	0.	61.	72.	59.	42.	48.	49.	48.	42.	34.	24.	12.	0.	0.	0.
EAST	0.	0.	0.	96.	133.	135.	118.	88.	49.	48.	42.	34.	24.	12.	0.	0.	0.
SOUTHEAST	0.	0.	0.	81.	131.	156.	145.	122.	89.	50.	34.	24.	12.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	34.	79.	121.	153.	173.	180.	173.	153.	121.	79.	34.	0.	0.	0.
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LOCATION NEW PORT, RHODE ISLAND LATITUDE 41 DEGREES 28 MINUTES

MONTH	4	HO	3205.	TOD	48.	TOT	46.	KT	.477	KD	.187						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0	0	7	20	51	80	103	118	123	118	103	80	51	20	7	0	0
SOUTHWEST	0	0	7	19	31	41	48	74	103	124	134	132	117	86	34	0	0
WEST	0	0	7	19	31	41	48	53	55	88	114	130	132	112	52	0	0
NORTHWEST	0	0	7	19	31	41	48	53	55	53	56	76	88	84	44	0	0
NORTH	0	0	14	19	31	41	48	53	55	53	48	41	31	19	14	0	0
NORTHEAST	0	0	44	84	88	76	56	53	55	53	48	41	31	19	7	0	0
EAST	0	0	52	112	132	130	114	88	55	53	48	41	31	19	7	0	0
SOUTHEAST	0	0	34	86	117	132	134	124	103	74	48	41	31	19	7	0	0
HORIZ.	0	0	17	59	101	139	167	186	192	186	167	139	101	59	17	0	0

MONTH	5	HO	3615.	TOD	59.	TOT	57.	KT	.520	KD	.185						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0	2	13	25	43	72	96	111	117	111	96	72	43	25	13	2	0
SOUTHWEST	0	2	13	25	36	46	53	69	100	123	135	135	121	94	53	3	0
WEST	0	2	13	25	36	46	53	58	59	96	126	145	149	135	91	5	0
NORTHWEST	0	2	13	25	36	46	53	58	59	58	74	97	111	111	83	5	0
NORTH	0	4	34	37	36	46	53	58	59	58	53	46	36	37	34	4	0
NORTHEAST	0	5	83	111	111	97	74	58	59	58	53	46	36	25	13	2	0
EAST	0	5	91	135	149	145	126	96	59	58	53	46	36	25	13	2	0
SOUTHEAST	0	3	53	94	121	135	135	123	100	69	53	46	36	25	13	2	0
HORIZ.	0	4	37	83	127	166	196	215	222	215	196	166	127	83	37	4	0

MONTH	6	HO	3764.	TOD	67.	TOT	66.	KT	.536	KD	.183						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0	4	15	26	38	68	91	107	112	107	91	68	38	26	15	4	0
SOUTHWEST	0	4	15	26	37	47	54	65	97	121	133	134	121	95	56	10	0
WEST	0	4	15	26	37	47	54	59	60	98	129	149	155	142	102	21	0
NORTHWEST	0	4	15	26	37	47	54	59	60	59	81	104	120	121	96	22	0
NORTH	0	13	43	45	37	47	54	59	60	59	54	47	37	45	43	13	0
NORTHEAST	0	22	96	121	120	104	81	59	60	59	54	47	37	26	15	4	0
EAST	0	21	102	142	155	149	129	98	60	59	54	47	37	26	15	4	0
SOUTHEAST	0	10	56	95	121	134	133	121	97	65	54	47	37	26	15	4	0
HORIZ.	0	8	46	92	137	176	207	226	233	226	207	176	137	92	46	8	0

LOCATION NEW PORT, RHODE ISLAND LATITUDE 41 DEGREES 28 MINUTES

MONTH	7	H0	3613.	TOD	73.	TOT	71.	KT	.529	KD	.184						
ORIENTATION																	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	2.	13.	25.	43.	73.	97.	113.	118.	113.	97.	73.	43.	25.	13.	2.	0.
SOUTHWEST	0.	2.	13.	25.	36.	46.	53.	69.	101.	124.	137.	137.	123.	95.	53.	3.	0.
WEST	0.	2.	13.	25.	36.	46.	53.	58.	59.	97.	128.	147.	152.	136.	91.	5.	0.
NORTHWEST	0.	2.	13.	25.	36.	46.	53.	58.	59.	58.	75.	98.	113.	113.	84.	5.	0.
NORTH	0.	4.	35.	37.	36.	46.	53.	58.	59.	58.	53.	46.	36.	37.	35.	4.	0.
NORTHEAST	0.	5.	84.	113.	113.	98.	75.	58.	59.	58.	53.	46.	36.	25.	13.	2.	0.
EAST	0.	5.	91.	136.	152.	147.	128.	97.	59.	58.	53.	46.	36.	25.	13.	2.	0.
SOUTHEAST	0.	3.	53.	95.	123.	137.	137.	124.	101.	69.	53.	46.	36.	25.	13.	2.	0.
HORIZ.	0.	4.	37.	84.	129.	169.	200.	219.	226.	219.	200.	169.	129.	84.	37.	4.	0.
DAILY TOTAL RADIATION												SAG/DAYTIME SATGS		TIME SATGS		SAG/ALL DAY SATGS	
849.												121.		158.		100.	
1016.												130.		174.		106.	
1048.												132.		178.		107.	
837.												120.		156.		100.	
595.												107.		132.		91.	
837.												120.		156.		100.	
1048.												132.		178.		107.	
1016.												130.		174.		106.	
1911.												181.		263.		136.	

DAILY TOTAL RADIATION

SAG/DAYTIME SAT6S SAT6D SAG/ALL DAY SAT6S SAT6D

SOUTH	849.	121.	158.	100.	122.
SOUTHWEST	1016.	130.	174.	106.	132.
WEST	1048.	132.	178.	107.	134.
NORTHWEST	837.	120.	156.	100.	122.
NORTH	595.	107.	133.	91.	107.
NORTHEAST	837.	120.	156.	100.	122.
EAST	1048.	132.	178.	107.	134.
SOUTHEAST	1016.	130.	174.	106.	132.
HORIZ.	1911.	181.	263.	136.	186.

MONTH	8	H0	3182.	TOD	72.	TOT	69.	KT	.513	KD	.186
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ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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DAILY TOTAL RADIATION

SAG/DAYTIME SAT6S SAT6D SAG/ALL DAY SAT6S SAT6D

SOUTH	940.	130.	174.	102.	126.
SOUTHWEST	1009.	134.	181.	104.	130.
WEST	932.	129.	173.	101.	126.
NORTHWEST	680.	114.	146.	93.	110.
NORTH	474.	101.	123.	86.	98.
NORTHEAST	680.	114.	146.	93.	110.
EAST	932.	129.	173.	101.	126.
SOUTHEAST	1009.	134.	181.	104.	130.
HORIZ.	1633.	172.	248.	125.	168.

MONTH	9	H0	2554.	TOD	67.	TOT	63.	KT	.524	KD	.185
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ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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DAILY TOTAL RADIATION

SAG/DAYTIME SAT6S SAT6D SAG/ALL DAY SAT6S SAT6D

SOUTH	1113.	142.	200.	101.	130.
SOUTHWEST	1021.	136.	189.	98.	124.
WEST	793.	121.	162.	90.	111.
NORTHWEST	494.	100.	126.	80.	93.
NORTH	368.	92.	111.	75.	85.
NORTHEAST	494.	100.	126.	80.	93.
EAST	793.	121.	162.	90.	111.
SOUTHEAST	1021.	136.	189.	98.	124.
HORIZ.	1337.	158.	227.	108.	143.

LOCATION NEW PORT, RHODE ISLAND LATITUDE 41 DEGRFS 28 MINUTES

MONTH	10	H0	1888.	T00	56.	TOT	53.	HOURLY SOLAR RADIATION								KT	.512	KD	.186			
ORIENTATION																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
SOUTH	0.	0.	0.	9.	66.	110.	142.	162.	169.	162.	142.	110.	66.	9.	0.	0.	0.					
SOUTHWEST	0.	0.	0.	3.	15.	25.	57.	97.	131.	155.	164.	154.	117.	20.	0.	0.	0.					
WEST	0.	0.	0.	3.	15.	25.	34.	39.	41.	40.	109.	123.	108.	22.	0.	0.	0.					
NORTHWEST	0.	0.	0.	3.	15.	25.	34.	39.	41.	39.	34.	35.	45.	12.	0.	0.	0.					
NORTH	0.	0.	0.	3.	15.	25.	34.	39.	41.	39.	34.	25.	15.	3.	0.	0.	0.					
NORTHEAST	0.	0.	0.	12.	45.	35.	34.	39.	41.	39.	34.	25.	15.	3.	0.	0.	0.					
EAST	0.	0.	0.	22.	108.	123.	109.	80.	41.	39.	34.	25.	15.	3.	0.	0.	0.					
SOUTHEAST	0.	0.	0.	20.	117.	154.	164.	155.	131.	97.	57.	25.	15.	3.	0.	0.	0.					
HORIZ.	0.	0.	0.	7.	47.	89.	122.	143.	150.	143.	122.	89.	47.	7.	0.	0.	0.					
DAILY TOTAL RADIATION																						
SAG/DAYTIME SATES SATGD SAG/ALL DAY SATES SATGD SATES SATGD																						
1148. 139. 206. 90. 120.																						
939. 124. 179. 83. 107.																						
599. 99. 134. 72. 88.																						
321. 79. 98. 63. 71.																						
273. 76. 92. 61. 69.																						
321. 79. 98. 63. 71.																						
599. 99. 134. 72. 88.																						
939. 124. 179. 83. 107.																						
966. 126. 182. 84. 109.																						

DAILY TOTAL RADIATION

SAG/DAYTIME SATGS SATGD

SAG/ALL DAY SATGS SATGD

1148. 139. 206. 90. 120.  
939. 124. 179. 83. 107.  
599. 99. 134. 72. 88.  
321. 79. 98. 63. 71.  
273. 76. 92. 61. 69.  
321. 79. 98. 63. 71.  
599. 99. 134. 72. 88.  
939. 124. 179. 83. 107.  
966. 126. 182. 84. 109.

MONTH 11	H0	1337.	TOD	46.	TOT	43.	HOURLY SOLAR RADIATION								KT	440	KD					.185					
ORIENTATION																											
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20											
SOUTH	0.	0.	0.	38.	88.	120.	139.	145.	139.	120.	88.	38.	0.	0.	0.	0.	915.	121.	181.	72.	96.						
SOUTHWEST	0.	0.	0.	7.	19.	52.	84.	111.	129.	132.	116.	60.	0.	0.	0.	0.	710.	104.	151.	65.	84.						
WEST	0.	0.	0.	7.	16.	24.	29.	30.	60.	81.	85.	51.	0.	0.	0.	0.	384.	78.	103.	55.	65.						
NORTHWEST	0.	0.	0.	7.	16.	24.	29.	30.	29.	24.	16.	17.	0.	0.	0.	0.	192.	62.	75.	49.	54.						
NORTH	0.	0.	0.	7.	16.	24.	29.	30.	29.	24.	16.	7.	0.	0.	0.	0.	183.	61.	73.	48.	53.						
NORTHEAST	0.	0.	0.	17.	16.	24.	29.	30.	29.	24.	16.	7.	0.	0.	0.	0.	192.	62.	75.	49.	54.						
EAST	0.	0.	0.	51.	85.	81.	60.	30.	29.	24.	16.	7.	0.	0.	0.	0.	384.	78.	103.	55.	65.						
SOUTHEAST	0.	0.	0.	60.	116.	132.	129.	111.	84.	52.	19.	7.	0.	0.	0.	0.	710.	104.	151.	65.	84.						
HORIZ.	0.	0.	0.	17.	51.	79.	96.	103.	96.	79.	51.	17.	0.	0.	0.	0.	589.	94.	133.	61.	77.						

DAILY TOTAL RADIATION

SAG/DAYTIME SATGS SATGD

SAG/ALL DAY SATGS SATGD

915. 121. 181. 72. 96.  
710. 104. 151. 65. 84.  
384. 78. 103. 55. 65.  
192. 62. 75. 49. 54.  
183. 61. 73. 48. 53.  
192. 62. 75. 49. 54.  
384. 78. 103. 55. 65.  
710. 104. 151. 65. 84.  
589. 94. 133. 61. 77.

MONTH	12	H0	1131.	TOD	34.	TOT	32.	KT	.460	KD	.186					
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	25.	90.	128.	149.	156.	149.	128.	90.	25.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	4.	20.	55.	90.	119.	136.	139.	116.	38.	0.	0.	0.
WEST	0.	0.	0.	0.	4.	14.	21.	26.	28.	59.	81.	82.	31.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	4.	14.	21.	26.	28.	26.	21.	14.	9.	0.	0.	0.
NORTH	0.	0.	0.	0.	4.	14.	21.	26.	28.	26.	21.	14.	4.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	9.	14.	21.	26.	28.	26.	21.	14.	4.	0.	0.	0.
EAST	0.	0.	0.	0.	31.	82.	81.	59.	28.	26.	21.	14.	4.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	38.	116.	139.	136.	119.	90.	55.	20.	4.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	9.	42.	71.	90.	96.	90.	71.	42.	9.	0.	0.	0.
DAILY TOTAL RADIATION												115.	180.	62.	86.	
SAG/DAYTIME												96.	146.	55.	73.	
SATGS SATGD												64.	88.	43.	52.	
SAG/ALL DAY												48.	60.	37.	41.	
SATGS SATGD												48.	59.	37.	41.	
DAILY TOTAL RADIATION												163.	158.	137.	141.	
SAG/DAYTIME												163.	163.	137.	141.	
SATGS SATGD												64.	88.	43.	52.	
SAG/ALL DAY												96.	146.	55.	73.	
SATGS SATGD												521.	49.	115.	62.	

DAILY TOTAL RADIATION

SAG/DAYTIME SATGS SATGD

SAG/ALL DAY SATGS SATGD

939. 115. 180. 62. 86.  
715. 96. 146. 55. 73.  
345. 64. 88. 43. 52.  
163. 48. 60. 37. 41.  
158. 48. 59. 37. 41.  
163. 48. 60. 37. 41.  
345. 64. 88. 43. 52.  
715. 96. 146. 55. 73.  
521. 79. 115. 48. 62.

LOCATION NEW PORT, RHODE ISLAND LATITUDE 41 DEGREES 28 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	104.	109.	109.	99.	106.	111.	121.	130.	142.	139.	121.	115.	117.
SOUTHWEST	87.	95.	103.	103.	115.	123.	130.	134.	136.	124.	104.	96.	113.
WEST	61.	74.	89.	99.	117.	127.	132.	117.	121.	99.	78.	64.	90.
NORTHWEST	45.	55.	71.	86.	105.	117.	120.	114.	100.	79.	62.	48.	84.
NORTH	44.	52.	63.	75.	92.	103.	107.	101.	92.	76.	61.	48.	76.
NORTHEAST	45.	55.	71.	86.	105.	117.	120.	114.	100.	79.	62.	48.	84.
EAST	61.	74.	89.	99.	117.	127.	132.	129.	121.	99.	78.	64.	99.
SOUTHEAST	87.	95.	103.	103.	115.	123.	130.	134.	136.	124.	104.	96.	113.
HORIZ.	77.	98.	123.	136.	165.	177.	181.	172.	158.	126.	94.	79.	132.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	164.	171.	165.	140.	143.	145.	158.	174.	200.	206.	181.	180.	169.
SOUTHWEST	134.	147.	155.	147.	159.	165.	174.	181.	189.	179.	151.	146.	161.
WEST	86.	107.	130.	140.	162.	173.	178.	173.	162.	134.	103.	88.	136.
NORTHWEST	58.	74.	97.	116.	141.	155.	156.	146.	126.	98.	75.	60.	108.
NORTH	57.	68.	82.	97.	118.	130.	132.	123.	111.	92.	73.	59.	95.
NORTHEAST	58.	74.	97.	116.	141.	155.	156.	146.	126.	98.	75.	60.	108.
EAST	86.	107.	130.	140.	162.	173.	178.	173.	162.	134.	103.	88.	136.
SOUTHEAST	134.	147.	155.	147.	159.	165.	174.	181.	189.	179.	151.	146.	161.
HORIZ.	116.	153.	190.	207.	246.	262.	263.	248.	227.	182.	133.	115.	195.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	58.	63.	72.	74.	86.	93.	100.	102.	101.	90.	72.	62.	81.
SOUTHWEST	52.	57.	69.	76.	91.	100.	106.	104.	98.	83.	65.	55.	80.
WEST	41.	47.	62.	74.	92.	103.	107.	101.	90.	72.	55.	43.	74.
NORTHWEST	35.	39.	53.	67.	85.	97.	100.	93.	80.	63.	49.	37.	66.
NORTH	35.	37.	49.	61.	77.	88.	91.	86.	75.	61.	48.	37.	62.
NORTHEAST	35.	39.	53.	67.	85.	97.	100.	93.	80.	63.	49.	37.	66.
EAST	41.	47.	62.	74.	92.	103.	107.	101.	90.	72.	55.	43.	74.
SOUTHEAST	52.	57.	69.	76.	91.	100.	106.	104.	98.	83.	65.	55.	80.
HORIZ.	48.	58.	78.	95.	121.	135.	136.	125.	108.	84.	61.	48.	92.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	82.	91.	100.	97.	108.	115.	122.	126.	130.	120.	96.	86.	106.
SOUTHWEST	70.	80.	95.	101.	118.	127.	132.	130.	124.	107.	84.	73.	104.
WEST	51.	62.	82.	97.	119.	132.	134.	126.	111.	88.	65.	52.	93.
NORTHWEST	40.	47.	65.	84.	107.	120.	122.	110.	93.	71.	54.	41.	80.
NORTH	39.	45.	58.	73.	93.	105.	107.	98.	85.	69.	53.	41.	72.
NORTHEAST	40.	47.	65.	84.	107.	120.	122.	110.	93.	71.	54.	41.	80.
EAST	51.	62.	82.	97.	119.	132.	134.	126.	111.	88.	65.	52.	93.
SOUTHEAST	70.	80.	95.	101.	118.	127.	132.	130.	124.	107.	84.	73.	104.
HORIZ.	63.	83.	112.	135.	170.	188.	186.	168.	143.	109.	77.	62.	125.



LOCATION		NEW YORK, N.Y.		LATITUDE		40 DEGREES		46 MINUTES										
MONTH	1	HO	1388.	TOD	35.	TOT	33.	KT	.406	KD	.183							
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
		HOURLY SOLAR RADIATION																
SOUTH	0.	0.	0.	0.	0.	37.	80.	108.	124.	129.	124.	108.	80.	37.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	0.	7.	18.	48.	77.	100.	115.	118.	105.	59.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	0.	7.	17.	24.	29.	30.	56.	74.	78.	50.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	0.	7.	17.	24.	29.	30.	29.	24.	17.	17.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	0.	7.	17.	24.	29.	30.	29.	24.	17.	7.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	0.	17.	24.	29.	30.	29.	24.	17.	7.	0.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	0.	50.	78.	74.	56.	30.	29.	24.	17.	7.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	0.	59.	105.	118.	115.	100.	77.	48.	18.	7.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	0.	18.	49.	75.	91.	97.	91.	75.	49.	18.	0.	0.	0.	0.
		DAILY TOTAL RADIATION																
		826.																
		101.																
		156.																
		59.																
		81.																
		87.																
		129.																
		88.																
		64.																
		365.																
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		44.																
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LOCATION NEW YORK, N.Y. LATITUDE 40 DEGREES 46 MINUTES

MONTH	4	HO	3220.	TOD	52.	TOT	50.	HOURLY SOLAR RADIATION								KD	.186			
								KT	13	14	15	16	17	18	19	20				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	0.	0.	7.	20.	48.	76.	97.	111.	116.	111.	97.	76.	48.	20.	7.	0.	0.			
SOUTHWEST	0.	0.	7.	19.	30.	40.	48.	71.	98.	117.	126.	124.	109.	80.	31.	0.	0.			
WEST	0.	0.	7.	19.	30.	40.	48.	52.	54.	85.	109.	123.	124.	105.	48.	0.	0.			
NORTHWEST	0.	0.	7.	19.	30.	40.	48.	52.	54.	52.	56.	74.	84.	79.	41.	0.	0.			
NORTH	0.	0.	14.	19.	30.	40.	48.	52.	54.	52.	48.	40.	30.	19.	14.	0.	0.			
NORTHEAST	0.	0.	41.	79.	84.	74.	56.	52.	54.	52.	48.	40.	30.	19.	7.	0.	0.			
EAST	0.	0.	48.	105.	124.	123.	109.	85.	54.	52.	48.	40.	30.	19.	7.	0.	0.			
SOUTHEAST	0.	0.	31.	80.	109.	124.	126.	117.	98.	71.	48.	40.	30.	19.	7.	0.	0.			
HORIZ.	0.	0.	17.	56.	97.	133.	160.	178.	184.	178.	160.	133.	97.	56.	17.	0.	0.			

MONTH	5	HO	3619.	TOD	63.	TOT	61.	KT	.488	KD	.187						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	2.	13.	24.	41.	68.	90.	104.	108.	104.	90.	68.	41.	24.	13.	2.	0.
SOUTHWEST	0.	2.	13.	24.	35.	45.	52.	66.	94.	114.	125.	124.	111.	86.	48.	3.	0.
WEST	0.	2.	13.	24.	35.	45.	52.	57.	59.	91.	117.	134.	137.	123.	82.	4.	0.
NORTHWEST	0.	2.	13.	24.	35.	45.	52.	57.	59.	57.	72.	92.	103.	102.	75.	4.	0.
NORTH	0.	3.	32.	35.	35.	45.	52.	57.	59.	57.	52.	45.	35.	35.	32.	3.	0.
NORTHEAST	0.	4.	75.	102.	103.	92.	72.	57.	59.	57.	52.	45.	35.	24.	13.	2.	0.
EAST	0.	4.	82.	123.	137.	134.	117.	91.	59.	57.	52.	45.	35.	24.	13.	2.	0.
SOUTHEAST	0.	3.	48.	86.	111.	124.	125.	114.	94.	66.	52.	45.	35.	24.	13.	2.	0.
HORIZ.	0.	3.	35.	78.	120.	156.	195.	202.	209.	202.	185.	156.	120.	78.	35.	3.	0.

MONTH	6	HO	3763.	TOD	72.	TOT	70.	KT	.530	KD	.184						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	4.	15.	26.	37.	66.	89.	104.	109.	104.	89.	66.	37.	26.	15.	4.	0.
SOUTHWEST	0.	4.	15.	26.	37.	47.	54.	64.	95.	118.	131.	131.	118.	93.	55.	9.	0.
WEST	0.	4.	15.	26.	37.	47.	54.	59.	61.	98.	128.	147.	152.	139.	99.	18.	0.
NORTHWEST	0.	4.	15.	26.	37.	47.	54.	59.	61.	59.	82.	104.	119.	119.	94.	19.	0.
NORTH	0.	11.	42.	45.	38.	47.	54.	59.	61.	59.	54.	47.	38.	45.	42.	11.	0.
NORTHEAST	0.	19.	94.	119.	119.	104.	82.	59.	61.	59.	54.	47.	37.	26.	15.	4.	0.
EAST	0.	18.	99.	139.	152.	147.	128.	98.	61.	59.	54.	47.	37.	26.	15.	4.	0.
SOUTHEAST	0.	9.	55.	93.	118.	131.	131.	118.	95.	64.	54.	47.	37.	26.	15.	4.	0.
HORIZ.	0.	8.	44.	90.	135.	175.	205.	224.	231.	224.	205.	175.	135.	90.	44.	8.	0.

LOCATION	NEW YORK, N.Y.	LATITUDE	40 DEGREES	46 MINUTES
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MONTH	7	H0	3616.	T00	77.	T0T	75.	HOURLY SOLAR RADIATION								KD		.184				
ORIENTATION																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						
16																						
17																						
18																						
19																						
20																						
DAILY TOTAL RADIATION																						
SAG/DAYTIME SATGS SATGD																						
SAG/ALL DAY SATGD																						
SOUTH	0.	2.	13.	25.	42.	71.	95.	111.	116.	111.	95.	71.	42.	25.	13.	2.	0.	834.	124.	160.	103.	125.
SOUTHWEST	0.	2.	13.	25.	36.	46.	53.	68.	100.	123.	136.	136.	122.	94.	52.	3.	0.	1006.	134.	177.	109.	135.
WEST	0.	2.	13.	25.	36.	46.	53.	58.	60.	97.	128.	147.	151.	136.	89.	4.	0.	1044.	136.	181.	110.	138.
NORTHWEST	0.	2.	13.	25.	36.	46.	53.	58.	60.	58.	76.	99.	113.	112.	82.	4.	0.	837.	124.	161.	103.	125.
NORTH	0.	3.	34.	38.	36.	46.	53.	58.	60.	58.	53.	46.	36.	38.	34.	3.	0.	595.	111.	136.	95.	111.
NORTHEAST	0.	4.	82.	112.	113.	99.	76.	58.	60.	58.	53.	46.	36.	25.	13.	2.	0.	837.	124.	161.	103.	125.
EAST	0.	4.	89.	136.	151.	147.	128.	97.	60.	58.	53.	46.	36.	25.	13.	2.	0.	1044.	136.	181.	110.	138.
SOUTHEAST	0.	3.	94.	123.	136.	123.	100.	68.	53.	46.	36.	25.	13.	2.	0.	0.	0.	1006.	134.	177.	109.	135.
HORIZ.	0.	4.	37.	83.	129.	169.	200.	227.	220.	200.	169.	129.	83.	37.	4.	0.	0.	1909.	185.	268.	140.	190.

[illegible]

MONTH	9	H0	2581.	T00	69.	TOT	67.	KT	.500	KD	.188							
ORIENTATION																		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SOUTH	0.	0.	0.	25.	62.	97.	124.	141.	147.	141.	124.	97.	62.	25.	0.	0.	0.	
SOUTHWEST	0.	0.	0.	12.	24.	34.	48.	86.	118.	141.	152.	147.	125.	75.	0.	0.	0.	
WEST	0.	0.	0.	0.	12.	24.	34.	43.	48.	49.	87.	116.	132.	128.	89.	0.	0.	
NORTHWEST	0.	0.	0.	12.	24.	34.	43.	48.	49.	48.	43.	59.	70.	57.	0.	0.	0.	
NORTH	0.	0.	0.	12.	24.	34.	43.	48.	49.	48.	43.	34.	24.	12.	0.	0.	0.	
NORTHEAST	0.	0.	0.	57.	70.	59.	43.	48.	49.	48.	43.	34.	24.	12.	0.	0.	0.	
EAST	0.	0.	0.	89.	132.	116.	87.	49.	48.	43.	34.	24.	12.	0.	0.	0.	0.	
SOUTHEAST	0.	0.	0.	75.	125.	147.	152.	141.	118.	86.	48.	34.	24.	12.	0.	0.	0.	
ORIZ.	0.	0.	1.	33.	78.	120.	172.	179.	172.	152.	120.	78.	33.	1.	0.	0.	0.	
DAILY TOTAL RADIATION												1045.	SAG/DAYTIME SATGS		141.	195.	103.	130.
SAG/ALL DAY SATGS												964.	SAG/ALL DAY SATGS		135.	185.	100.	126.
DAILY TOTAL RADIATION												761.	SAG/DAYTIME SATGS		121.	161.	93.	113.
SAG/ALL DAY SATGS												487.	SAG/ALL DAY SATGS		103.	128.	84.	97.
DAILY TOTAL RADIATION												370.	SAG/DAYTIME SATGS		95.	114.	80.	90.
SAG/ALL DAY SATGS												487.	SAG/ALL DAY SATGS		103.	128.	84.	97.
DAILY TOTAL RADIATION												761.	SAG/DAYTIME SATGS		121.	161.	93.	113.
SAG/ALL DAY SATGS												964.	SAG/ALL DAY SATGS		135.	185.	100.	126.
DAILY TOTAL RADIATION												1289.	SAG/DAYTIME SATGS		157.	224.	111.	145.

LOCATION		NEW YORK, N.Y.										LATITUDE 40 DEGREES 46 MINUTES												
MONTH	10	HO	1924.	TOD	59.	TOT	57.	KT	.475 KD .187															
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
SOUTH		0.	0.	0.	10.	60.	100.	129.	146.	152.	146.	129.	100.	60.	10.	0.	0.	0.	1041.	134.	195.	90.	118.	
SOUTHWEST		0.	0.	0.	4.	15.	25.	53.	89.	120.	140.	148.	139.	106.	21.	0.	0.	0.	860.	121.	171.	85.	107.	
WEST		0.	0.	0.	4.	15.	25.	33.	38.	40.	74.	100.	112.	98.	22.	0.	0.	0.	563.	100.	133.	75.	90.	
NORTHWEST		0.	0.	0.	4.	15.	25.	33.	38.	40.	38.	33.	34.	42.	12.	0.	0.	0.	316.	82.	100.	67.	75.	
NORTH		0.	0.	0.	4.	15.	25.	33.	38.	40.	38.	33.	25.	15.	4.	0.	0.	0.	272.	79.	95.	66.	73.	
NORTHEAST		0.	0.	0.	12.	42.	34.	33.	38.	40.	38.	33.	25.	15.	4.	0.	0.	0.	316.	82.	100.	67.	75.	
EAST		0.	0.	0.	22.	98.	112.	100.	74.	40.	38.	33.	25.	15.	4.	0.	0.	0.	563.	100.	133.	75.	90.	
SOUTHEAST		0.	0.	0.	21.	106.	139.	148.	140.	120.	89.	53.	25.	15.	4.	0.	0.	0.	860.	121.	171.	85.	107.	
HORIZ.		0.	0.	0.	7.	45.	84.	115.	135.	141.	135.	115.	84.	45.	7.	0.	0.	0.	914.	125.	178.	86.	110.	
MONTH	11	HO	1376.	TOD	48.	TOT	46.	KT	.397 KD .183															
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
SOUTH		0.	0.	0.	0.	35.	77.	104.	120.	125.	120.	104.	77.	35.	0.	0.	0.	0.	795.	112.	165.	72.	93.	
SOUTHWEST		0.	0.	0.	0.	7.	18.	47.	74.	97.	111.	114.	100.	54.	0.	0.	0.	0.	624.	99.	139.	66.	83.	
WEST		0.	0.	0.	0.	7.	16.	24.	28.	30.	54.	71.	74.	47.	0.	0.	0.	0.	352.	77.	100.	58.	67.	
NORTHWEST		0.	0.	0.	0.	7.	16.	24.	28.	30.	28.	24.	16.	16.	0.	0.	0.	0.	189.	64.	76.	52.	57.	
NORTH		0.	0.	0.	0.	7.	16.	24.	28.	30.	28.	24.	16.	7.	0.	0.	0.	0.	181.	63.	75.	52.	57.	
NORTHEAST		0.	0.	0.	0.	16.	16.	24.	28.	30.	28.	24.	16.	7.	0.	0.	0.	0.	189.	64.	76.	52.	57.	
EAST		0.	0.	0.	0.	47.	74.	71.	54.	30.	28.	24.	16.	7.	0.	0.	0.	0.	352.	77.	100.	58.	67.	
SOUTHEAST		0.	0.	0.	0.	54.	100.	114.	111.	97.	74.	47.	18.	7.	0.	0.	0.	0.	624.	99.	139.	66.	83.	
HORIZ.		0.	0.	0.	0.	17.	48.	73.	89.	94.	89.	73.	48.	17.	0.	0.	0.	0.	547.	92.	128.	64.	78.	
MONTH	12	HO	1171.	TOD	38.	TOT	36.	KT	.403 KD .183															
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
SOUTH		0.	0.	0.	0.	23.	75.	106.	123.	129.	123.	106.	75.	23.	0.	0.	0.	0.	785.	104.	159.	61.	81.	
SOUTHWEST		0.	0.	0.	0.	5.	18.	47.	76.	99.	113.	115.	96.	35.	0.	0.	0.	0.	605.	89.	131.	55.	71.	
WEST		0.	0.	0.	0.	5.	14.	21.	25.	27.	52.	68.	69.	29.	0.	0.	0.	0.	309.	64.	85.	46.	54.	
NORTHWEST		0.	0.	0.	0.	5.	14.	21.	25.	27.	25.	21.	14.	9.	0.	0.	0.	0.	159.	51.	62.	41.	45.	
NORTH		0.	0.	0.	0.	5.	14.	21.	25.	27.	25.	21.	14.	5.	0.	0.	0.	0.	155.	51.	62.	41.	45.	
NORTHEAST		0.	0.	0.	0.	9.	14.	21.	25.	27.	25.	21.	14.	5.	0.	0.	0.	0.	159.	51.	62.	41.	45.	
EAST		0.	0.	0.	0.	29.	69.	68.	52.	27.	25.	21.	14.	5.	0.	0.	0.	0.	309.	64.	85.	46.	54.	
SOUTHEAST		0.	0.	0.	0.	35.	96.	115.	113.	99.	76.	47.	18.	5.	0.	0.	0.	0.	605.	89.	131.	55.	71.	
HORIZ.		0.	0.	0.	0.	10.	39.	64.	80.	86.	80.	64.	39.	10.	0.	0.	0.	0.	473.	78.	111.	51.	63.	



LOCATION NEW YORK, N.Y.

LATITUDE 40 DEGREES 46 MINUTES

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	101.	102.	108.	100.	108.	116.	124.	129.	141.	134.	112.	104.	115.
SOUTHWEST	87.	91.	103.	104.	117.	127.	134.	133.	135.	121.	99.	89.	112.
WEST	64.	73.	91.	101.	119.	132.	136.	129.	121.	100.	77.	64.	100.
NORTHWEST	50.	57.	74.	89.	108.	122.	124.	116.	103.	82.	64.	51.	87.
NORTH	50.	54.	66.	79.	96.	108.	111.	104.	95.	79.	63.	51.	80.
NORTHEAST	50.	57.	74.	89.	108.	122.	124.	116.	103.	82.	64.	51.	87.
EAST	64.	73.	91.	101.	119.	132.	136.	129.	121.	100.	77.	64.	100.
SOUTHEAST	87.	91.	103.	104.	117.	127.	134.	133.	135.	121.	99.	89.	112.
HORIZ.	80.	96.	123.	137.	163.	182.	185.	170.	157.	125.	92.	78.	132.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	156.	157.	160.	139.	143.	149.	160.	171.	195.	195.	165.	159.	162.
SOUTHWEST	129.	137.	152.	146.	158.	169.	177.	178.	185.	171.	139.	131.	156.
WEST	88.	104.	129.	140.	161.	177.	181.	171.	161.	133.	100.	85.	136.
NORTHWEST	63.	75.	99.	119.	143.	159.	161.	146.	128.	100.	76.	62.	111.
NORTH	62.	69.	86.	100.	121.	136.	136.	126.	114.	95.	75.	62.	98.
NORTHEAST	63.	75.	99.	119.	143.	159.	161.	146.	128.	100.	76.	62.	111.
EAST	88.	104.	129.	140.	161.	177.	181.	171.	161.	133.	100.	85.	136.
SOUTHEAST	129.	137.	152.	146.	158.	169.	177.	178.	185.	171.	139.	131.	156.
HORIZ.	117.	145.	187.	205.	240.	266.	268.	243.	224.	178.	128.	111.	193.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	59.	63.	73.	77.	88.	97.	103.	103.	103.	90.	72.	61.	82.
SOUTHWEST	54.	58.	71.	79.	93.	104.	109.	106.	100.	85.	66.	55.	82.
WEST	45.	50.	64.	77.	94.	107.	110.	103.	93.	75.	58.	46.	77.
NORTHWEST	39.	43.	56.	70.	88.	101.	103.	96.	84.	67.	52.	41.	70.
NORTH	39.	41.	52.	65.	81.	92.	95.	89.	80.	66.	52.	41.	66.
NORTHEAST	39.	43.	56.	70.	88.	101.	103.	96.	84.	67.	52.	41.	70.
EAST	45.	50.	64.	77.	94.	107.	110.	103.	93.	75.	58.	46.	77.
SOUTHEAST	54.	58.	71.	79.	93.	104.	109.	106.	100.	85.	66.	55.	82.
HORIZ.	51.	60.	81.	97.	121.	138.	140.	126.	111.	86.	64.	51.	94.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	81.	87.	100.	98.	109.	118.	125.	126.	130.	118.	93.	81.	106.
SOUTHWEST	71.	78.	95.	102.	118.	130.	135.	131.	126.	107.	83.	71.	104.
WEST	54.	64.	84.	99.	120.	135.	138.	127.	113.	90.	67.	54.	95.
NORTHWEST	44.	51.	69.	87.	109.	124.	125.	113.	97.	75.	57.	45.	83.
NORTH	44.	48.	62.	77.	96.	109.	111.	101.	90.	73.	57.	45.	76.
NORTHEAST	44.	51.	69.	87.	109.	124.	125.	113.	97.	75.	57.	45.	83.
EAST	54.	64.	84.	99.	120.	135.	138.	127.	113.	90.	67.	54.	95.
SOUTHEAST	71.	78.	95.	102.	118.	130.	135.	131.	126.	107.	83.	71.	104.
HORIZ.	66.	82.	113.	135.	167.	190.	190.	167.	145.	110.	78.	63.	126.

LOCATION		OAK RIDGE, TENNESSEE				LATITUDE 36 DEGREES 1 MINUTES																
MONTH 1	HO 1647.	TOD 42.	TOT 38.	KT .392	KD .182																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	0.	43.	77.	99.	112.	117.	112.	99.	77.	43.	0.	0.	0.	0.	778.	102.	151.	63.	83.
SOUTHWEST	0.	0.	0.	0.	10.	20.	46.	72.	93.	106.	110.	100.	67.	0.	0.	0.	0.	623.	90.	129.	58.	74.
WEST	0.	0.	0.	0.	10.	20.	27.	32.	34.	56.	72.	76.	58.	0.	0.	0.	0.	386.	72.	96.	50.	61.
NORTHWEST	0.	0.	0.	0.	10.	20.	27.	32.	34.	32.	27.	20.	21.	0.	0.	0.	0.	223.	59.	73.	45.	51.
NORTH	0.	0.	0.	0.	10.	20.	27.	32.	34.	32.	27.	20.	10.	0.	0.	0.	0.	212.	58.	72.	45.	50.
NORTHEAST	0.	0.	0.	0.	21.	20.	27.	32.	34.	32.	27.	20.	10.	0.	0.	0.	0.	223.	59.	73.	45.	51.
EAST	0.	0.	0.	0.	58.	76.	72.	56.	34.	32.	27.	20.	10.	0.	0.	0.	0.	386.	72.	96.	50.	61.
SOUTHEAST	0.	0.	0.	0.	67.	100.	110.	106.	93.	72.	46.	20.	10.	0.	0.	0.	0.	623.	90.	129.	58.	74.
HORIZ.	0.	0.	0.	0.	26.	57.	82.	98.	103.	98.	82.	57.	26.	0.	0.	0.	0.	627.	90.	130.	58.	75.
MONTH 2	HO 2188.	TOD 44.	TOT 40.	KT .435	KD .185																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	16.	58.	89.	113.	127.	132.	127.	113.	89.	58.	16.	0.	0.	0.	939.	110.	164.	71.	95.
SOUTHWEST	0.	0.	0.	5.	17.	28.	49.	80.	106.	124.	132.	126.	102.	37.	0.	0.	0.	806.	101.	147.	66.	87.
WEST	0.	0.	0.	5.	17.	28.	36.	41.	43.	72.	94.	105.	96.	39.	0.	0.	0.	577.	85.	118.	59.	74.
NORTHWEST	0.	0.	0.	5.	17.	28.	36.	41.	43.	41.	36.	39.	44.	22.	0.	0.	0.	353.	69.	89.	52.	61.
NORTH	0.	0.	0.	5.	17.	28.	36.	41.	43.	41.	36.	28.	17.	5.	0.	0.	0.	298.	65.	82.	50.	58.
NORTHEAST	0.	0.	0.	22.	44.	39.	36.	41.	43.	41.	36.	28.	17.	5.	0.	0.	0.	353.	69.	89.	52.	61.
EAST	0.	0.	0.	39.	96.	105.	94.	72.	43.	41.	36.	28.	17.	5.	0.	0.	0.	577.	85.	118.	59.	74.
SOUTHEAST	0.	0.	0.	37.	102.	126.	132.	124.	106.	80.	49.	28.	17.	5.	0.	0.	0.	806.	101.	147.	66.	87.
HORIZ.	0.	0.	0.	12.	51.	89.	118.	136.	142.	136.	118.	89.	51.	12.	0.	0.	0.	953.	111.	166.	71.	96.
MONTH 3	HO 2766.	TOD 52.	TOT 47.	KT .471	KD .187																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	24.	58.	88.	112.	127.	132.	127.	112.	88.	58.	24.	0.	0.	0.	950.	112.	162.	78.	103.
SOUTHWEST	0.	0.	0.	12.	25.	36.	45.	79.	108.	129.	139.	136.	118.	75.	0.	0.	0.	904.	110.	157.	77.	100.
WEST	0.	0.	0.	12.	25.	36.	44.	50.	52.	45.	111.	126.	123.	90.	0.	0.	0.	755.	100.	139.	72.	91.
NORTHWEST	0.	0.	0.	12.	25.	36.	44.	50.	52.	50.	44.	63.	71.	59.	0.	0.	0.	506.	84.	111.	64.	77.
NORTH	0.	0.	0.	12.	25.	36.	44.	50.	52.	50.	44.	36.	25.	12.	0.	0.	0.	387.	76.	97.	60.	70.
NORTHEAST	0.	0.	0.	59.	71.	63.	44.	50.	52.	50.	44.	36.	25.	12.	0.	0.	0.	506.	84.	111.	64.	77.
EAST	0.	0.	0.	90.	123.	126.	111.	85.	52.	50.	44.	36.	25.	12.	0.	0.	0.	755.	100.	139.	72.	91.
SOUTHEAST	0.	0.	0.	75.	118.	136.	139.	129.	108.	79.	45.	36.	25.	12.	0.	0.	0.	904.	110.	157.	77.	100.
HORIZ.	0.	0.	0.	35.	80.	121.	152.	172.	179.	172.	152.	121.	80.	35.	0.	0.	0.	1301.	135.	203.	89.	123.

LOCATION	OAK RIDGE, TENNESSEE	LATITUDE	36 DEGREES	1 MINUTES																				
MONTH	4	H0	3308.	T00	61.	T0T	58.	KT	.524	KD	.185													
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGD			
SOUTH	0.	0.	6.	19.	49.	79.	104.	120.	125.	120.	104.	79.	49.	19.	6.	0.	0.	881.	113.	155.	86.	109.		
SOUTHWEST	0.	0.	6.	19.	32.	43.	52.	72.	106.	130.	143.	143.	127.	94.	32.	0.	0.	1001.	120.	168.	90.	116.		
WEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	98.	129.	148.	150.	127.	50.	0.	0.	971.	118.	164.	89.	114.		
NORTHWEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	57.	69.	92.	104.	97.	43.	0.	0.	731.	104.	139.	81.	100.		
NORTH	0.	0.	14.	22.	32.	43.	52.	57.	59.	57.	52.	43.	32.	22.	14.	0.	0.	499.	91.	114.	74.	87.		
NORTHEAST	0.	0.	43.	97.	104.	92.	69.	57.	59.	57.	52.	43.	32.	19.	6.	0.	0.	731.	104.	139.	81.	100.		
EAST	0.	0.	50.	127.	150.	148.	129.	98.	59.	57.	52.	43.	32.	19.	6.	0.	0.	971.	118.	164.	89.	114.		
SOUTHEAST	0.	0.	32.	94.	127.	143.	143.	130.	106.	72.	52.	43.	32.	19.	6.	0.	0.	1001.	120.	168.	90.	116.		
HORIZ.	0.	0.	15.	63.	114.	158.	192.	214.	221.	214.	192.	158.	114.	63.	15.	0.	0.	1734.	163.	245.	113.	159.		
MONTH	5	H0	3633.	T00	70.	T0T	67.	KT	.541	KD	.182													
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGD			
SOUTH	0.	0.	11.	24.	36.	64.	87.	102.	108.	102.	87.	64.	36.	24.	11.	0.	0.	758.	114.	148.	93.	112.		
SOUTHWEST	0.	0.	11.	24.	36.	47.	55.	61.	94.	119.	133.	134.	121.	93.	48.	0.	0.	975.	127.	170.	100.	126.		
WEST	0.	0.	11.	24.	36.	47.	55.	60.	62.	101.	132.	152.	156.	139.	85.	0.	0.	1060.	132.	179.	103.	131.		
NORTHWEST	0.	0.	11.	24.	36.	47.	55.	60.	62.	60.	86.	109.	122.	118.	79.	0.	0.	868.	120.	159.	96.	119.		
NORTH	0.	0.	33.	41.	37.	47.	55.	60.	62.	60.	55.	47.	37.	41.	33.	0.	0.	607.	105.	132.	87.	103.		
NORTHEAST	0.	0.	79.	118.	122.	109.	86.	60.	62.	60.	55.	47.	36.	24.	11.	0.	0.	868.	120.	159.	96.	119.		
EAST	0.	0.	85.	139.	156.	152.	132.	101.	62.	60.	55.	47.	36.	24.	11.	0.	0.	1060.	132.	179.	103.	131.		
SOUTHEAST	0.	0.	48.	93.	121.	134.	133.	119.	94.	61.	55.	47.	36.	24.	11.	0.	0.	975.	127.	170.	100.	126.		
HORIZ.	0.	1.	32.	82.	132.	176.	210.	231.	238.	231.	210.	176.	132.	82.	32.	1.	0.	1964.	184.	272.	134.	185.		
MONTH	6	H0	3745.	T00	78.	T0T	76.	KT	.551	KD	.181													
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGD			
SOUTH	0.	2.	13.	25.	37.	57.	80.	95.	100.	95.	80.	57.	37.	25.	13.	2.	0.	721.	119.	150.	100.	119.		
SOUTHWEST	0.	2.	13.	25.	37.	48.	56.	61.	89.	114.	128.	130.	118.	91.	51.	2.	0.	965.	133.	175.	100.	134.		
WEST	0.	2.	13.	25.	37.	48.	56.	61.	62.	102.	134.	154.	159.	143.	95.	3.	0.	1093.	140.	187.	11.	142.		
NORTHWEST	0.	2.	13.	25.	37.	48.	56.	61.	62.	65.	93.	116.	129.	126.	91.	3.	0.	928.	130.	171.	108.	132.		
NORTH	0.	3.	42.	50.	45.	48.	56.	61.	62.	61.	56.	48.	45.	50.	42.	3.	0.	669.	116.	145.	89.	116.		
NORTHEAST	0.	3.	91.	126.	129.	116.	93.	65.	62.	61.	56.	48.	37.	25.	13.	2.	0.	928.	130.	171.	108.	132.		
EAST	0.	3.	95.	143.	159.	154.	134.	102.	62.	61.	56.	48.	37.	25.	13.	2.	0.	1093.	140.	187.	113.	142.		
SOUTHEAST	0.	2.	51.	91.	118.	130.	128.	114.	89.	61.	56.	48.	37.	25.	13.	2.	0.	965.	133.	175.	109.	134.		
HORIZ.	0.	3.	39.	89.	139.	183.	217.	238.	245.	238.	217.	183.	139.	89.	39.	3.	0.	2064.	195.	285.	146.	200.		

LOCATION OAK RIDGE, TENNESSEE LATITUDE 36 DEGREES 1 MINUTES

MONTH	7	H0	3628.	T00	80.	TOT	78.	KT	.536	KD	.183											
ORIENTATION																						
HOURLY SOLAR RADIATION																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
SOUTH	0.	0.	11.	24.	36.	63.	86.	101.	106.	101.	86.	63.	36.	24.	11.	0.	0.	750.	124.	157.	103.	123.
SOUTHWEST	0.	0.	11.	24.	36.	46.	55.	60.	93.	117.	131.	131.	118.	91.	46.	0.	0.	961.	136.	179.	111.	136.
WEST	0.	0.	11.	24.	36.	46.	55.	60.	61.	100.	131.	150.	154.	135.	82.	0.	0.	1045.	141.	188.	114.	141.
NORTHWEST	0.	0.	11.	24.	36.	46.	55.	60.	61.	60.	86.	108.	120.	115.	76.	0.	0.	858.	130.	168.	107.	130.
NORTH	0.	0.	32.	41.	37.	46.	55.	60.	61.	60.	55.	46.	37.	41.	32.	0.	0.	604.	115.	142.	98.	114.
NORTHEAST	0.	0.	76.	115.	120.	108.	86.	60.	61.	60.	55.	46.	36.	24.	11.	0.	0.	858.	130.	168.	107.	130.
EAST	0.	0.	82.	135.	154.	150.	131.	100.	61.	60.	55.	46.	36.	24.	11.	0.	0.	1045.	141.	188.	111.	136.
SOUTHEAST	0.	0.	46.	91.	118.	131.	131.	117.	93.	60.	55.	46.	36.	24.	11.	0.	0.	961.	136.	179.	111.	136.
HORIZ.	0.	1.	32.	81.	130.	174.	208.	229.	236.	229.	208.	174.	130.	81.	32.	1.	0.	1944.	193.	280.	144.	195.



[illegible][illegible]

MONTH	12	H0	1436.	TOD	42.	TOT	39.	KT	.422	KD	.184										
ORIENTATION																					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGD		
SOUTH	0.	0.	0.	41.	87.	115.	131.	136.	131.	115.	87.	41.	0.	0.	0.	0.	883.	114.	172.	67.	90.
SOUTHWEST	0.	0.	0.	8.	21.	52.	81.	106.	121.	125.	112.	63.	0.	0.	0.	0.	689.	98.	143.	61.	79.
WEST	0.	0.	0.	8.	18.	25.	30.	32.	58.	77.	81.	53.	0.	0.	0.	0.	382.	73.	98.	51.	61.
NORTHWEST	0.	0.	0.	0.	8.	18.	25.	30.	32.	30.	25.	18.	0.	0.	0.	0.	201.	59.	72.	45.	51.
NORTH	0.	0.	0.	8.	18.	25.	30.	32.	30.	25.	18.	8.	0.	0.	0.	0.	193.	58.	71.	45.	50.
NORTHEAST	0.	0.	0.	16.	18.	25.	30.	32.	30.	25.	18.	8.	0.	0.	0.	0.	201.	59.	72.	45.	51.
EAST	0.	0.	0.	53.	81.	77.	58.	32.	30.	25.	18.	8.	0.	0.	0.	0.	382.	73.	98.	51.	61.
SOUTHEAST	0.	0.	0.	63.	112.	125.	121.	106.	81.	52.	21.	8.	0.	0.	0.	0.	689.	98.	143.	61.	79.
SORIZ.	0.	0.	0.	19.	53.	81.	98.	104.	98.	81.	53.	19.	0.	0.	0.	0.	607.	91.	131.	58.	74.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	102.	110.	112.	113.	114.	119.	124.	134.	149.	146.	123.	114.	122.
SOUTHWEST	90.	101.	110.	120.	127.	133.	136.	141.	145.	133.	108.	98.	120.
WEST	72.	85.	100.	118.	132.	140.	141.	139.	133.	111.	84.	73.	111.
NORTHWEST	59.	69.	84.	104.	120.	130.	130.	124.	112.	90.	69.	59.	96.
NORTH	58.	65.	76.	91.	105.	116.	115.	110.	102.	85.	68.	58.	87.
NORTHEAST	59.	69.	84.	104.	120.	130.	130.	124.	112.	90.	69.	59.	96.
EAST	72.	85.	100.	118.	132.	140.	141.	139.	133.	111.	84.	73.	111.
SOUTHEAST	90.	101.	110.	120.	127.	133.	136.	141.	145.	133.	108.	98.	120.
HORIZ.	90.	111.	135.	163.	184.	195.	193.	188.	176.	143.	106.	91.	148.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	151.	164.	162.	155.	148.	150.	157.	176.	206.	214.	182.	172.	170.
SOUTHWEST	129.	147.	157.	168.	170.	175.	179.	189.	199.	190.	154.	143.	167.
WEST	96.	118.	139.	164.	179.	187.	188.	186.	177.	150.	112.	98.	150.
NORTHWEST	73.	89.	111.	139.	159.	171.	168.	159.	140.	111.	83.	72.	123.
NORTH	72.	82.	97.	114.	132.	145.	142.	133.	122.	103.	81.	71.	108.
NORTHEAST	73.	89.	111.	139.	159.	171.	168.	159.	140.	111.	83.	72.	123.
EAST	96.	118.	139.	164.	179.	187.	188.	186.	177.	150.	112.	98.	150.
SOUTHEAST	129.	147.	157.	168.	170.	175.	179.	189.	199.	190.	154.	143.	167.
HORIZ.	130.	166.	203.	245.	272.	285.	280.	272.	254.	208.	151.	131.	216.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	63.	71.	78.	86.	93.	100.	103.	107.	109.	96.	75.	67.	87.
SOUTHWEST	58.	66.	77.	90.	100.	109.	111.	111.	107.	90.	69.	61.	87.
WEST	50.	59.	72.	89.	103.	113.	114.	110.	100.	80.	59.	51.	83.
NORTHWEST	45.	52.	64.	81.	96.	108.	107.	101.	90.	71.	53.	45.	76.
NORTH	45.	50.	60.	74.	87.	99.	98.	94.	85.	68.	53.	45.	71.
NORTHEAST	45.	52.	64.	81.	96.	108.	107.	101.	90.	71.	53.	45.	76.
EAST	50.	59.	72.	89.	103.	113.	114.	110.	100.	80.	59.	51.	83.
SOUTHEAST	58.	66.	77.	90.	100.	109.	111.	111.	107.	90.	69.	61.	87.
HORIZ.	58.	71.	89.	113.	134.	146.	144.	137.	122.	95.	68.	58.	103.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	83.	95.	103.	109.	112.	119.	123.	130.	138.	127.	100.	90.	111.
SOUTHWEST	74.	87.	100.	116.	126.	134.	136.	137.	134.	117.	89.	79.	111.
WEST	61.	74.	91.	114.	131.	142.	141.	135.	123.	98.	71.	61.	103.
NORTHWEST	51.	61.	77.	100.	119.	132.	130.	121.	104.	81.	59.	51.	90.
NORTH	50.	58.	70.	87.	103.	116.	114.	107.	95.	77.	58.	50.	82.
NORTHEAST	51.	61.	77.	100.	119.	132.	130.	121.	104.	81.	59.	51.	90.
EAST	61.	74.	91.	114.	131.	142.	141.	135.	123.	98.	71.	61.	103.
SOUTHEAST	74.	87.	100.	116.	126.	134.	136.	137.	134.	117.	89.	79.	111.
HORIZ.	75.	96.	123.	159.	185.	200.	195.	183.	161.	125.	87.	74.	139.

LOCATION OKLAHOMA CITY, OKLAHOMA LATITUDE 35 DEGREES 23 MINUTES

MONTH	1	HO	1681.	TOD	40.	TOT	37.	KT	580	KD	.177.					
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	78.	137.	176.	198.	206.	198.	176.	137.	78.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	11.	23.	69.	117.	157.	186.	197.	185.	129.	0.	0.	0.
WEST	0.	0.	0.	0.	11.	23.	32.	37.	39.	86.	122.	138.	110.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	11.	23.	32.	37.	39.	37.	32.	34.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	11.	23.	32.	37.	39.	37.	32.	23.	11.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	34.	23.	32.	37.	39.	37.	32.	23.	11.	0.	0.	0.
EAST	0.	0.	0.	0.	110.	138.	122.	86.	39.	37.	32.	23.	11.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	129.	185.	197.	186.	157.	117.	69.	23.	11.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	38.	87.	127.	153.	162.	153.	127.	87.	38.	0.	0.	0.
DAILY TOTAL RADIATION												1384.	146.	233.	82.	118.
SAG/DAYTIME SATGS SATGD												1074.	123.	190.	72.	100.
SAG/ALL DAY SATGS SATGD												598.	86.	124.	56.	72.
SAG/ALL DAY SATGS SATGD												268.	61.	77.	46.	53.
SAG/ALL DAY SATGS SATGD												244.	59.	74.	45.	51.
SAG/ALL DAY SATGS SATGD												268.	61.	77.	46.	53.
SAG/ALL DAY SATGS SATGD												598.	86.	124.	56.	72.
SAG/ALL DAY SATGS SATGD												1074.	123.	190.	72.	100.
SAG/ALL DAY SATGS SATGD												973.	115.	176.	68.	94.

MONTH	2	HO	2217.	TOD	45.	TOT	42.	KT	571	KD	.178											
ORIENTATION																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
SOUTH	0.	0.	0.	23.	82.	126.	159.	179.	186.	179.	159.	126.	82.	23.	0.	0.	0.	1324.	138.	213.	84.	119.
SOUTHWEST	0.	0.	0.	6.	19.	30.	59.	105.	145.	174.	189.	184.	151.	57.	0.	0.	0.	1119.	123.	187.	78.	107.
WEST	0.	0.	0.	6.	19.	30.	39.	45.	47.	94.	131.	151.	143.	61.	0.	0.	0.	766.	99.	142.	66.	86.
NORTHWEST	0.	0.	0.	6.	19.	30.	39.	45.	47.	45.	39.	48.	62.	32.	0.	0.	0.	413.	74.	98.	55.	66.
NORTH	0.	0.	0.	6.	19.	30.	39.	45.	47.	45.	39.	30.	19.	6.	0.	0.	0.	325.	68.	86.	52.	61.
NORTHEAST	0.	0.	0.	32.	62.	48.	39.	45.	47.	45.	39.	30.	19.	6.	0.	0.	0.	413.	74.	98.	55.	66.
EAST	0.	0.	0.	61.	143.	151.	131.	94.	47.	45.	39.	30.	19.	6.	0.	0.	0.	766.	99.	142.	66.	86.
SOUTHEAST	0.	0.	0.	57.	151.	184.	189.	174.	145.	105.	59.	30.	19.	6.	0.	0.	0.	1119.	123.	187.	78.	107.
HORIZ.	0.	0.	0.	14.	67.	118.	157.	182.	191.	182.	157.	118.	67.	14.	0.	0.	0.	1267.	134.	206.	82.	116.

MONTH	3	HO	2787.	TOD	53.	TOT	50.	KT	.576	KD	.177					
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	29.	71.	110.	140.	159.	165.	159.	140.	110.	71.	29.	0.	0.
SOUTHWEST	0.	0.	0.	13.	26.	38.	47.	93.	133.	163.	179.	178.	156.	101.	0.	0.
WEST	0.	0.	0.	13.	26.	38.	47.	53.	54.	102.	140.	164.	164.	121.	0.	0.
NORTHWEST	0.	0.	0.	13.	26.	38.	47.	53.	54.	53.	47.	76.	92.	78.	0.	0.
NORTH	0.	0.	0.	13.	26.	38.	47.	53.	54.	53.	47.	38.	26.	13.	0.	0.
NORTHEAST	0.	0.	0.	78.	92.	76.	47.	53.	54.	53.	47.	38.	26.	13.	0.	0.
EAST	0.	0.	0.	121.	164.	164.	140.	102.	54.	53.	47.	38.	26.	13.	0.	0.
SOUTHEAST	0.	0.	0.	101.	156.	178.	179.	163.	133.	93.	47.	38.	26.	13.	0.	0.
HORIZ.	0.	0.	0.	41.	98.	149.	189.	214.	222.	214.	189.	149.	98.	41.	0.	0.
DAILY TOTAL RADIATION												1183.	129.	191.	88.	119.
SAG/DAYTIME SATGS												1125.	125.	184.	86.	115.
SATGS												922.	112.	160.	79.	103.
SATGS												576.	90.	120.	68.	83.
SATGS												406.	79.	100.	63.	73.
SATGS												576.	90.	120.	68.	83.
SATGS												922.	112.	160.	79.	103.
SATGS												1125.	125.	184.	86.	115.
SATGS												1604.	156.	240.	101.	143.

LOCATION OKLAHOMA CITY, OKLAHOMA LATITUDE 35 DEGREES 23 MINUTES

MONTH	4	HO	3317.	TOD	64.	TOT	60.	KT	.570	KD	.178						
HOURLY SOLAR RADIATION																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	6.	19.	51.	84.	111.	128.	134.	128.	111.	84.	51.	19.	6.	0.	0.
SOUTHWEST	0.	0.	6.	19.	33.	44.	53.	75.	113.	141.	157.	158.	142.	105.	35.	0.	0.
WEST	0.	0.	6.	19.	33.	44.	53.	58.	60.	105.	142.	165.	169.	143.	56.	0.	0.
NORTHWEST	0.	0.	6.	19.	33.	44.	53.	58.	60.	58.	74.	101.	116.	109.	47.	0.	0.
NORTH	0.	0.	15.	22.	33.	44.	53.	58.	60.	58.	53.	44.	33.	22.	15.	0.	0.
NORTHEAST	0.	0.	47.	109.	116.	101.	74.	58.	60.	58.	53.	44.	33.	19.	6.	0.	0.
EAST	0.	0.	56.	143.	169.	165.	142.	105.	60.	58.	53.	44.	33.	19.	6.	0.	0.
SOUTHEAST	0.	0.	35.	105.	142.	158.	157.	141.	113.	75.	53.	44.	33.	19.	6.	0.	0.
HORIZ.	0.	0.	15.	68.	124.	173.	211.	234.	243.	234.	211.	173.	124.	68.	15.	0.	0.
DAILY TOTAL RADIATION												SAG/DAYTIME SATGS		SAG/ALL DAY SATGS			
936.												118. 163.		90. 115.			
1080.												127. 178.		95. 123.			
1051.												125. 175.		94. 122.			
777.												109. 146.		85. 106.			
508.												93. 118.		77. 90.			
777.												109. 146.		85. 106.			
1051.												125. 175.		94. 122.			
1080.												127. 178.		95. 123.			
1892.												174. 265.		121. 171.			

MONTH	5	HO	3633.	TOD	71.	TOT	68.	KT	.558	KD	.180						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	11.	24.	36.	64.	88.	103.	109.	103.	88.	64.	36.	24.	11.	0.	0.
SOUTHWEST	0.	0.	11.	24.	36.	47.	55.	60.	95.	121.	136.	138.	125.	96.	49.	0.	0.
WEST	0.	0.	11.	24.	36.	47.	55.	60.	62.	103.	137.	158.	163.	145.	88.	0.	0.
NORTHWEST	0.	0.	11.	24.	36.	47.	55.	60.	62.	60.	90.	113.	127.	123.	82.	0.	0.
NORTH	0.	0.	34.	43.	38.	47.	55.	60.	62.	60.	55.	47.	38.	43.	34.	0.	0.
NORTHEAST	0.	0.	82.	123.	127.	113.	90.	60.	62.	60.	55.	47.	36.	24.	11.	0.	0.
EAST	0.	0.	88.	145.	163.	158.	137.	103.	62.	60.	55.	47.	36.	24.	11.	0.	0.
SOUTHEAST	0.	0.	49.	96.	125.	138.	136.	121.	95.	60.	55.	47.	36.	24.	11.	0.	0.
HORIZ.	0.	0.	32.	84.	136.	182.	217.	239.	247.	239.	217.	182.	136.	84.	32.	0.	0.

MONTH	6	HO	3742.	TOD	81.	TOT	77.	KT	.629	KD	.167						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	2.	12.	25.	37.	59.	85.	102.	108.	102.	85.	59.	37.	25.	12.	2.	0.
SOUTHWEST	0.	2.	12.	25.	37.	48.	56.	61.	95.	127.	145.	149.	137.	107.	59.	2.	0.
WEST	0.	2.	12.	25.	37.	48.	56.	61.	63.	113.	154.	181.	189.	172.	113.	3.	0.
NORTHWEST	0.	2.	12.	25.	37.	48.	56.	61.	63.	69.	105.	134.	153.	151.	109.	3.	0.
NORTH	0.	2.	48.	56.	49.	48.	56.	61.	63.	61.	56.	48.	49.	56.	48.	2.	0.
NORTHEAST	0.	3.	109.	151.	153.	134.	105.	69.	63.	61.	56.	48.	37.	25.	12.	2.	0.
EAST	0.	3.	113.	172.	189.	181.	154.	113.	63.	61.	56.	48.	37.	25.	12.	2.	0.
SOUTHEAST	0.	2.	59.	107.	137.	149.	145.	127.	95.	61.	56.	48.	37.	25.	12.	2.	0.
HORIZ.	0.	3.	42.	100.	158.	209.	249.	274.	282.	274.	249.	209.	158.	100.	42.	3.	0.
												</					



LOCATION OKLAHOMA CITY, OKLAHOMA LATITUDE 35 DEGREES 23 MINUTES

MONTH 7 HO 3628. TOD 85. TOT 82. KT .618 KD .170

ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	11.	24.	36.	67.	94.	111.	117.	111.	94.	67.	36.	24.	11.	0.	0.
SOUTHWEST	0.	0.	11.	24.	36.	47.	55.	61.	101.	132.	151.	154.	140.	108.	54.	0.	0.
WEST	0.	0.	11.	24.	36.	47.	55.	61.	63.	112.	152.	178.	185.	165.	99.	0.	0.
NORTHWEST	0.	0.	11.	24.	36.	47.	55.	61.	63.	61.	97.	126.	143.	140.	92.	0.	0.
NORTH	0.	0.	38.	46.	39.	47.	55.	61.	63.	61.	55.	47.	39.	46.	38.	0.	0.
NORTHEAST	0.	0.	92.	140.	143.	126.	97.	61.	63.	61.	55.	47.	36.	24.	11.	0.	0.
EAST	0.	0.	99.	165.	185.	178.	152.	112.	63.	61.	55.	47.	36.	24.	11.	0.	0.
SOUTHEAST	0.	0.	54.	108.	140.	154.	151.	132.	101.	61.	55.	47.	36.	24.	11.	0.	0.
HORIZ.	0.	0.	34.	92.	150.	201.	241.	266.	275.	266.	241.	201.	150.	92.	34.	0.	0.

MONTH 8 HO 3293. TOD 85. TOT 82. KT .565 KD .179

ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	6.	19.	50.	83.	109.	127.	132.	127.	109.	83.	50.	19.	6.	0.	0.
SOUTHWEST	0.	0.	6.	19.	32.	43.	52.	74.	111.	139.	154.	155.	138.	100.	31.	0.	0.
WEST	0.	0.	6.	19.	32.	43.	52.	58.	60.	104.	140.	161.	164.	136.	49.	0.	0.
NORTHWEST	0.	0.	6.	19.	32.	43.	52.	58.	60.	58.	73.	99.	113.	104.	41.	0.	0.
NORTH	0.	0.	14.	22.	32.	43.	52.	58.	60.	58.	52.	43.	32.	22.	14.	0.	0.
NORTHEAST	0.	0.	41.	104.	113.	99.	73.	58.	60.	58.	52.	43.	32.	19.	6.	0.	0.
EAST	0.	0.	49.	136.	164.	161.	140.	104.	60.	58.	52.	43.	32.	19.	6.	0.	0.
SOUTHEAST	0.	0.	31.	100.	138.	155.	154.	139.	111.	74.	52.	43.	32.	19.	6.	0.	0.
HORIZ.	0.	0.	15.	66.	121.	170.	208.	232.	240.	232.	208.	170.	121.	66.	15.	0.	0.

MONTH 9 HO 2771. TOD 77. TOT 74. KT .628 KD .167

ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	29.	76.	119.	153.	174.	181.	174.	153.	119.	76.	29.	0.	0.	0.
SOUTHWEST	0.	0.	0.	12.	26.	38.	47.	98.	144.	179.	198.	197.	172.	108.	0.	0.	0.
WEST	0.	0.	0.	12.	26.	38.	47.	52.	54.	110.	154.	181.	181.	130.	0.	0.	0.
NORTHWEST	0.	0.	0.	12.	26.	38.	47.	52.	54.	52.	48.	82.	100.	83.	0.	0.	0.
NORTH	0.	0.	0.	12.	26.	38.	47.	52.	54.	52.	47.	38.	26.	12.	0.	0.	0.
NORTHEAST	0.	0.	0.	83.	100.	82.	48.	52.	54.	52.	47.	38.	26.	12.	0.	0.	0.
EAST	0.	0.	0.	130.	181.	181.	154.	110.	54.	52.	47.	38.	26.	12.	0.	0.	0.
SOUTHEAST	0.	0.	0.	108.	172.	197.	198.	179.	144.	98.	47.	38.	26.	12.	0.	0.	0.
HORIZ.	0.	0.	0.	42.	105.	161.	206.	233.	243.	233.	206.	161.	105.	42.	0.	0.	0.

LOCATION OKLAHOMA CITY, OKLAHOMA LATITUDE 35 DEGREES 23 MINUTES

MONTH 10 HO 2183. TOD 66. TOT 63. KT .614 KD .171

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	21.	88.	138.	174.	197.	205.	197.	174.	138.	88.	21.	0.	0.	0.	1441.	168.	250.	109.	147.
SOUTHWEST	0.	0.	0.	5.	18.	30.	62.	114.	159.	191.	208.	202.	163.	53.	0.	0.	0.	1204.	151.	220.	102.	133.
WEST	0.	0.	0.	5.	18.	30.	39.	45.	47.	100.	142.	165.	154.	57.	0.	0.	0.	801.	123.	169.	89.	110.
NORTHWEST	0.	0.	0.	5.	18.	30.	39.	45.	47.	45.	39.	49.	65.	30.	0.	0.	0.	412.	95.	119.	76.	87.
NORTH	0.	0.	0.	5.	18.	30.	39.	45.	47.	45.	39.	30.	18.	5.	0.	0.	0.	321.	89.	107.	73.	82.
NORTHEAST	0.	0.	0.	30.	65.	49.	39.	45.	47.	45.	39.	30.	18.	5.	0.	0.	0.	412.	95.	119.	76.	87.
EAST	0.	0.	0.	57.	154.	165.	142.	100.	47.	45.	39.	30.	18.	5.	0.	0.	0.	801.	123.	169.	89.	110.
SOUTHEAST	0.	0.	0.	53.	163.	202.	208.	191.	159.	114.	62.	30.	18.	5.	0.	0.	0.	1204.	151.	220.	102.	133.
HORIZ.	0.	0.	0.	13.	69.	124.	167.	195.	204.	195.	167.	124.	69.	13.	0.	0.	0.	1340.	161.	237.	106.	141.

MONTH 11 HO 1668. TOD 52. TOT 49. KT .588 KD .176

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	78.	139.	179.	202.	210.	202.	179.	139.	78.	0.	0.	0.	0.	1405.	160.	248.	94.	131.
SOUTHWEST	0.	0.	0.	0.	11.	22.	70.	119.	160.	189.	201.	187.	128.	0.	0.	0.	0.	1087.	136.	204.	84.	112.
WEST	0.	0.	0.	0.	11.	22.	31.	37.	39.	87.	124.	139.	110.	0.	0.	0.	0.	600.	98.	136.	68.	84.
NORTHWEST	0.	0.	0.	0.	11.	22.	31.	37.	39.	37.	31.	23.	34.	0.	0.	0.	0.	266.	73.	89.	58.	64.
NORTH	0.	0.	0.	0.	11.	22.	31.	37.	39.	37.	31.	22.	11.	0.	0.	0.	0.	243.	71.	86.	57.	63.
NORTHEAST	0.	0.	0.	0.	34.	23.	31.	37.	39.	37.	31.	22.	11.	0.	0.	0.	0.	266.	73.	89.	58.	64.
EAST	0.	0.	0.	0.	110.	139.	124.	87.	39.	37.	31.	22.	11.	0.	0.	0.	0.	600.	98.	136.	68.	84.
SOUTHEAST	0.	0.	0.	0.	128.	187.	201.	189.	160.	119.	70.	22.	11.	0.	0.	0.	0.	1087.	136.	204.	84.	112.
HORIZ.	0.	0.	0.	0.	37.	88.	129.	155.	163.	155.	129.	88.	37.	0.	0.	0.	0.	979.	128.	189.	80.	106.

MONTH 12 HO 1470. TOD 43. TOT 40. KT .608 KD .172

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	72.	146.	191.	217.	226.	217.	191.	146.	72.	0.	0.	0.	0.	1480.	162.	259.	88.	126.
SOUTHWEST	0.	0.	0.	0.	8.	26.	76.	127.	170.	200.	211.	192.	115.	0.	0.	0.	0.	1126.	133.	207.	7.	106.
WEST	0.	0.	0.	0.	8.	19.	28.	34.	36.	86.	124.	137.	94.	0.	0.	0.	0.	567.	89.	126.	58.	73.
NORTHWEST	0.	0.	0.	0.	8.	19.	28.	34.	36.	34.	28.	19.	24.	0.	0.	0.	0.	232.	62.	77.	48.	54.
NORTH	0.	0.	0.	0.	8.	19.	28.	34.	36.	34.	28.	19.	8.	0.	0.	0.	0.	216.	60.	75.	47.	53.
NORTHEAST	0.	0.	0.	0.	24.	19.	28.	34.	36.	34.	28.	19.	8.	0.	0.	0.	0.	232.	62.	77.	48.	54.
EAST	0.	0.	0.	0.	94.	137.	124.	86.	36.	34.	28.	19.	8.	0.	0.	0.	0.	567.	89.	126.	58.	73.
SOUTHEAST	0.	0.	0.	0.	115.	192.	211.	200.	170.	127.	76.	26.	8.	0.	0.	0.	0.	1126.	133.	207.	76.	106.
HORIZ.	0.	0.	0.	0.	27.	78.	119.	146.	155.	146.	119.	78.	27.	0.	0.	0.	0.	895.	115.	173.	69.	92.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	146.	138.	129.	118.	116.	124.	132.	143.	165.	168.	160.	162.	142.
SOUTHWEST	123.	123.	125.	127.	129.	141.	148.	151.	160.	136.	136.	133.	137.
WEST	86.	99.	112.	125.	135.	151.	155.	149.	145.	123.	98.	89.	122.
NORTHWEST	61.	74.	90.	109.	123.	139.	141.	133.	118.	95.	73.	62.	101.
NORTH	59.	68.	79.	93.	107.	121.	123.	117.	105.	89.	71.	60.	91.
NORTHEAST	61.	74.	90.	109.	123.	139.	141.	133.	118.	95.	73.	62.	101.
EAST	86.	99.	112.	125.	135.	151.	155.	149.	145.	123.	98.	89.	122.
SOUTHEAST	123.	123.	125.	127.	129.	141.	148.	151.	160.	151.	136.	133.	137.
HORIZ.	115.	134.	156.	174.	190.	215.	216.	201.	196.	161.	128.	115.	167.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	233.	213.	191.	163.	150.	156.	168.	187.	232.	250.	248.	259.	204.
SOUTHWEST	190.	187.	184.	178.	174.	188.	196.	202.	224.	220.	204.	207.	196.
WEST	124.	142.	160.	175.	184.	204.	208.	198.	196.	169.	136.	126.	169.
NORTHWEST	77.	98.	120.	146.	163.	184.	184.	169.	149.	119.	89.	77.	131.
NORTH	74.	86.	100.	118.	135.	152.	151.	141.	126.	107.	86.	75.	113.
NORTHEAST	77.	98.	120.	146.	163.	184.	184.	169.	149.	119.	89.	77.	131.
EAST	124.	142.	160.	175.	184.	204.	208.	198.	196.	169.	136.	126.	169.
SOUTHEAST	190.	187.	184.	178.	174.	188.	196.	202.	224.	220.	204.	207.	196.
HORIZ.	176.	206.	240.	265.	281.	318.	317.	290.	287.	237.	189.	173.	248.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	82.	84.	88.	90.	94.	103.	110.	113.	118.	109.	94.	88.	98.
SOUTHWEST	72.	78.	86.	95.	102.	114.	119.	118.	116.	102.	84.	76.	97.
WEST	56.	66.	79.	94.	105.	120.	123.	117.	108.	89.	68.	58.	90.
NORTHWEST	46.	55.	68.	85.	98.	113.	115.	108.	94.	76.	58.	48.	80.
NORTH	45.	52.	63.	77.	89.	102.	104.	99.	88.	73.	57.	47.	75.
NORTHEAST	46.	55.	68.	85.	98.	113.	115.	108.	94.	76.	58.	48.	80.
EAST	56.	66.	79.	94.	105.	120.	123.	117.	108.	89.	68.	58.	90.
SOUTHEAST	72.	78.	86.	95.	102.	114.	119.	118.	116.	102.	84.	76.	97.
HORIZ.	68.	82.	101.	121.	137.	158.	159.	146.	133.	106.	80.	69.	113.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	118.	119.	119.	115.	114.	123.	131.	138.	152.	147.	131.	126.	128.
SOUTHWEST	100.	107.	115.	123.	128.	142.	147.	146.	148.	133.	112.	106.	126.
WEST	72.	86.	103.	122.	134.	152.	154.	144.	134.	110.	84.	73.	114.
NORTHWEST	53.	66.	83.	106.	122.	140.	140.	128.	110.	87.	64.	54.	96.
NORTH	51.	61.	73.	90.	105.	120.	120.	112.	98.	82.	63.	53.	86.
NORTHEAST	53.	66.	83.	106.	122.	140.	140.	128.	110.	87.	64.	54.	96.
EAST	72.	86.	103.	122.	134.	152.	154.	144.	134.	110.	84.	73.	114.
SOUTHEAST	100.	107.	115.	123.	128.	142.	147.	146.	148.	133.	112.	106.	126.
HORIZ.	94.	116.	143.	171.	190.	220.	218.	194.	179.	141.	106.	92.	155.





LOCATION	PORTLAND, MAINE	LATITUDE	43 DEGREES	38 MINUTES
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MONTH	4	H0	3157.	T00	45.	TOT	42.	HOURLY SOLAR RADIATION							KT			KD			.188		
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	8.	22.	55.	87.	112.	128.	133.	128.	112.	87.	55.	22.	8.	0.	0.	955.	99.	143.	73.	98.	
SOUTHWEST	0.	0.	8.	20.	31.	41.	48.	79.	110.	132.	143.	141.	125.	93.	38.	0.	0.	1010.	102.	149.	74.	101.	
WEST	0.	0.	8.	20.	31.	41.	48.	53.	55.	91.	120.	137.	140.	120.	59.	0.	0.	921.	97.	140.	71.	96.	
NORTHWEST	0.	0.	8.	20.	31.	41.	48.	53.	55.	53.	54.	77.	91.	89.	50.	0.	0.	667.	83.	114.	63.	81.	
NORTH	0.	0.	16.	20.	31.	41.	48.	53.	55.	53.	48.	41.	31.	20.	16.	0.	0.	470.	72.	93.	57.	69.	
NORTHEAST	0.	0.	50.	89.	91.	77.	54.	53.	55.	53.	48.	41.	31.	20.	8.	0.	0.	667.	83.	114.	63.	81.	
EAST	0.	0.	59.	120.	140.	137.	120.	91.	55.	53.	48.	41.	31.	20.	8.	0.	0.	921.	97.	140.	71.	96.	
SOUTHEAST	0.	0.	38.	93.	125.	141.	143.	132.	110.	79.	48.	41.	31.	20.	8.	0.	0.	1010.	102.	149.	74.	101.	
HORIZ.	0.	0.	19.	61.	105.	143.	172.	191.	197.	191.	172.	143.	105.	61.	19.	0.	0.	1579.	135.	208.	93.	134.	

MONTH	5	H0	3602.	T00	55.	TOT	52.	KT	.544	KD	.182											
ORIENTATION	4	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
		5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGDS	SATGDS		
SOUTH	0.	3.	13.	25.	47.	79.	105.	121.	127.	121.	105.	79.	47.	25.	13.	3.	0.	914.	106.	145.	84.	108.
SOUTHWEST	0.	3.	13.	25.	36.	45.	53.	73.	107.	132.	145.	145.	131.	102.	59.	6.	0.	1076.	115.	161.	89.	117.
WEST	0.	3.	13.	25.	36.	45.	53.	57.	59.	99.	131.	153.	159.	145.	101.	12.	0.	1091.	116.	163.	90.	118.
NORTHWEST	0.	3.	13.	25.	36.	45.	53.	57.	59.	57.	71.	98.	115.	118.	92.	12.	0.	854.	103.	139.	82.	104.
NORTH	0.	7.	37.	36.	36.	45.	53.	57.	59.	57.	53.	45.	36.	36.	37.	7.	0.	600.	89.	114.	73.	89.
NORTHEAST	0.	12.	92.	118.	115.	98.	71.	57.	59.	57.	53.	45.	36.	25.	13.	3.	0.	854.	103.	139.	82.	104.
EAST	0.	12.	101.	145.	159.	153.	131.	99.	59.	57.	53.	45.	36.	25.	13.	3.	0.	1091.	116.	163.	90.	118.
SOUTHEAST	0.	6.	59.	102.	131.	145.	145.	132.	107.	73.	53.	45.	36.	25.	13.	3.	0.	1076.	115.	161.	89.	117.
NORIZ.	0.	6.	41.	87.	133.	173.	203.	223.	229.	203.	173.	133.	87.	41.	6.	0.	0.	1959.	164.	248.	119.	171.

MONTH	6	H0	3766.	TOD	65.	TOT	62.	KT	.536	KD	.183										
ORIENTATION	4	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY								
		5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS
SOUTH	0.	5.	16.	27.	42.	72.	96.	112.	117.	112.	96.	72.	42.	27.	16.	5.	0.	111.	146.	91.	113.
SOUTHWEST	0.	5.	16.	27.	37.	47.	54.	68.	100.	124.	137.	137.	124.	97.	59.	14.	0.	121.	164.	98.	125.
WEST	0.	5.	16.	27.	37.	47.	54.	58.	60.	98.	129.	149.	155.	143.	106.	30.	0.	123.	171.	100.	129.
NORTHWEST	0.	5.	16.	27.	37.	47.	54.	58.	60.	58.	77.	101.	118.	121.	99.	32.	0.	114.	151.	93.	117.
NORTH	0.	18.	44.	43.	37.	47.	54.	58.	60.	58.	54.	47.	37.	43.	44.	18.	0.	101.	128.	84.	102.
NORTHEAST	0.	32.	99.	121.	118.	101.	77.	58.	60.	58.	54.	47.	37.	27.	16.	5.	0.	909.	114.	93.	117.
EAST	0.	30.	106.	143.	155.	149.	129.	98.	60.	58.	54.	47.	37.	27.	16.	5.	0.	1113.	125.	171.	100.
SOUTHEAST	0.	14.	59.	97.	124.	137.	124.	100.	68.	54.	47.	37.	27.	16.	5.	0.	0.	1046.	121.	164.	98.
PORIZ.	0.	11.	49.	93.	137.	175.	205.	224.	230.	205.	175.	137.	93.	49.	11.	0.	0.	2019.	174.	257.	131.



LOCATION	PORTLAND, MAINE		LATITUDE		43 DEGREES		38 MINUTES										
MONTH 10	HO	1779.	TOD	52.	TOT	48.	KT	.539	KD	.183							
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	7.	69.	118.	154.	176.	184.	176.	154.	118.	69.	7.	0.	0.	0.
SOUTHWEST	0.	0.	0.	3.	14.	24.	60.	104.	142.	167.	177.	166.	122.	14.	0.	0.	0.
WEST	0.	0.	0.	3.	14.	24.	32.	37.	39.	82.	115.	130.	112.	15.	0.	0.	0.
NORTHWEST	0.	0.	0.	3.	14.	24.	32.	37.	39.	37.	32.	33.	45.	8.	0.	0.	0.
NORTH	0.	0.	0.	3.	14.	24.	32.	37.	39.	37.	32.	24.	14.	3.	0.	0.	0.
NORTHEAST	0.	0.	0.	8.	45.	33.	32.	37.	39.	37.	32.	24.	14.	3.	0.	0.	0.
EAST	0.	0.	0.	15.	112.	130.	115.	82.	39.	37.	32.	24.	14.	3.	0.	0.	0.
SOUTHEAST	0.	0.	0.	14.	122.	166.	177.	167.	142.	104.	60.	24.	14.	3.	0.	0.	0.
HORIZ.	0.	0.	0.	5.	45.	88.	122.	144.	151.	144.	122.	88.	45.	5.	0.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS	141.	124.	96.	74.	71.	86.	74.	96.	124.	121.	178.						
SATGS SATGD	1232.	992.	603.	304.	258.	304.	258.	304.	258.	304.	258.	304.	258.	304.	258.	304.	258.
SAG/ALL DAY SATGS SATGD	88.	120.	80.	106.	66.	66.	66.	66.	66.	66.	66.	66.	66.	66.	66.	66.	66.

MONTH 11	HO	1217.	TOD	40.	TOT	38.	KT	.431	KD	.185							
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	0.	30.	83.	116.	135.	142.	135.	116.	83.	30.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	0.	6.	18.	50.	82.	108.	125.	127.	108.	47.	0.	0.	0.
WEST	0.	0.	0.	0.	0.	6.	15.	22.	26.	28.	57.	77.	79.	40.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	0.	6.	15.	22.	26.	28.	26.	22.	15.	13.	0.	0.	0.
NORTH	0.	0.	0.	0.	0.	6.	15.	22.	26.	28.	26.	22.	15.	6.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	0.	13.	15.	22.	26.	28.	26.	22.	15.	6.	0.	0.	0.
EAST	0.	0.	0.	0.	0.	40.	79.	77.	57.	28.	26.	22.	15.	6.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	0.	47.	108.	127.	125.	108.	82.	50.	18.	6.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	0.	13.	44.	71.	88.	94.	88.	71.	44.	13.	0.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS	112.	96.	69.	55.	54.	55.	66.	55.	66.	55.	66.	55.	66.	55.	66.	55.	66.
SATGS SATGD	871.	672.	349.	173.	165.	173.	165.	173.	165.	173.	165.	173.	165.	173.	165.	173.	165.
SAG/ALL DAY SATGS SATGD	65.	59.	49.	58.	48.	47.	48.	48.	48.	48.	48.	48.	48.	48.	48.	48.	48.

MONTH 12	HO	1012.	TOD	28.	TOT	25.	KT	.491	KD	.188							
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	0.	15.	93.	139.	164.	172.	164.	139.	93.	15.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	0.	3.	19.	58.	97.	129.	149.	150.	120.	22.	0.	0.	0.
WEST	0.	0.	0.	0.	0.	3.	12.	20.	25.	26.	61.	85.	84.	18.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	0.	3.	12.	20.	25.	26.	25.	20.	12.	6.	0.	0.	0.
NORTH	0.	0.	0.	0.	0.	3.	12.	20.	25.	26.	25.	20.	12.	3.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	0.	6.	12.	20.	25.	26.	25.	20.	12.	3.	0.	0.	0.
EAST	0.	0.	0.	0.	0.	18.	84.	85.	61.	26.	25.	20.	12.	3.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	0.	22.	120.	150.	149.	129.	97.	58.	19.	3.	0.	0.	0.
SORIZ.	0.	0.	0.	0.	0.	6.	38.	68.	88.	95.	88.	68.	38.	6.	0.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS	115.	94.	57.	41.	41.	41.	51.	41.	52.	41.	52.	41.	51.	41.	52.	41.	51.
SATGS SATGD	993.	747.	334.	148.	145.	145.	145.	145.	145.	145.	145.	145.	145.	145.	145.	145.	145.
SAG/ALL DAY SATGS SATGD	57.	49.	36.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.	34.

LOCATION PORTLAND, MAINE LATITUDE 43 DEGREES 38 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	108.	111.	116.	99.	106.	111.	124.	133.	143.	141.	112.	115.	118.
SOUTHWEST	89.	95.	108.	102.	115.	121.	133.	137.	135.	124.	96.	94.	112.
WEST	57.	68.	89.	97.	116.	125.	134.	130.	117.	96.	69.	57.	96.
NORTHWEST	39.	47.	67.	83.	103.	114.	120.	112.	95.	74.	55.	41.	79.
NORTH	38.	43.	57.	72.	89.	101.	105.	98.	86.	71.	54.	41.	71.
NORTHEAST	39.	47.	67.	83.	103.	114.	120.	112.	95.	74.	55.	41.	79.
EAST	57.	68.	89.	97.	116.	125.	134.	130.	117.	96.	69.	57.	96.
SOUTHEAST	89.	95.	108.	102.	115.	121.	133.	137.	135.	124.	96.	94.	112.
HORIZ.	73.	93.	125.	135.	164.	174.	185.	175.	153.	121.	84.	72.	129.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	177.	182.	182.	143.	145.	146.	164.	182.	205.	214.	171.	187.	175.
SOUTHWEST	142.	152.	168.	149.	161.	164.	181.	188.	191.	183.	141.	148.	164.
WEST	84.	104.	134.	140.	163.	171.	183.	177.	159.	131.	93.	81.	135.
NORTHWEST	51.	65.	93.	114.	139.	151.	158.	145.	120.	92.	66.	52.	104.
NORTH	50.	59.	76.	93.	114.	128.	131.	120.	105.	86.	65.	51.	90.
NORTHEAST	51.	65.	93.	114.	139.	151.	158.	145.	120.	92.	66.	52.	104.
EAST	84.	104.	134.	140.	163.	171.	183.	177.	159.	131.	93.	81.	135.
SOUTHEAST	142.	152.	168.	149.	161.	164.	181.	188.	191.	183.	141.	148.	164.
HORIZ.	113.	149.	198.	208.	248.	257.	273.	255.	224.	178.	119.	107.	194.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	54.	60.	72.	73.	84.	91.	100.	102.	99.	88.	65.	57.	79.
SOUTHWEST	46.	53.	68.	74.	89.	98.	106.	104.	95.	80.	59.	49.	77.
WEST	34.	41.	59.	71.	90.	100.	107.	101.	86.	68.	49.	36.	70.
NORTHWEST	27.	31.	48.	63.	82.	93.	98.	90.	75.	58.	43.	30.	62.
NORTH	26.	30.	43.	57.	73.	84.	89.	83.	71.	57.	43.	30.	57.
NORTHEAST	27.	31.	48.	63.	82.	93.	98.	90.	75.	58.	43.	30.	62.
EAST	34.	41.	59.	71.	90.	100.	107.	101.	86.	68.	49.	36.	70.
SOUTHEAST	46.	53.	68.	74.	89.	98.	106.	104.	95.	80.	59.	49.	77.
HORIZ.	40.	52.	77.	93.	119.	131.	138.	126.	105.	79.	54.	41.	88.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	80.	91.	106.	98.	108.	113.	125.	130.	131.	120.	88.	83.	106.
SOUTHWEST	66.	78.	98.	101.	117.	125.	136.	133.	124.	106.	77.	69.	103.
WEST	44.	57.	82.	96.	118.	129.	137.	127.	108.	84.	58.	45.	90.
NORTHWEST	31.	40.	61.	81.	104.	117.	121.	109.	88.	66.	48.	34.	75.
NORTH	31.	37.	53.	69.	89.	102.	105.	95.	80.	63.	47.	34.	67.
NORTHEAST	31.	40.	61.	81.	104.	117.	121.	109.	88.	66.	48.	34.	75.
EAST	44.	57.	82.	96.	118.	129.	137.	127.	108.	84.	58.	45.	90.
SOUTHEAST	66.	78.	98.	101.	117.	125.	136.	133.	124.	106.	77.	69.	103.
HORIZ.	55.	77.	114.	134.	171.	184.	192.	171.	140.	104.	68.	54.	122.



LOCATION		RAPID CITY, S.D.		LATITUDE		44 DEGREES		9 MINUTES																					
MONTH		1	HO	1201.	TOD	25.	TOT	21.	KT	.601					.174					KD		DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS			
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20											
SOUTH		0.	0.	0.	0.	48.	135.	188.	218.	228.	218.	188.	135.	48.	0.	0.	0.	0.	1406.	142.	237.	66.	103.						
SOUTHWEST		0.	0.	0.	0.	6.	20.	72.	126.	170.	200.	207.	179.	79.	0.	0.	0.	0.	1059.	113.	185.	55.	83.						
WEST		0.	0.	0.	0.	6.	15.	24.	29.	30.	81.	119.	128.	66.	0.	0.	0.	0.	498.	66.	100.	37.	50.						
NORTHWEST		0.	0.	0.	0.	6.	15.	24.	29.	30.	29.	24.	15.	18.	0.	0.	0.	0.	190.	40.	53.	27.	32.						
NORTH		0.	0.	0.	0.	6.	15.	24.	29.	30.	29.	24.	15.	6.	0.	0.	0.	0.	177.	39.	51.	27.	31.						
NORTHEAST		0.	0.	0.	0.	18.	15.	24.	29.	30.	29.	24.	15.	6.	0.	0.	0.	0.	190.	40.	53.	27.	32.						
EAST		0.	0.	0.	0.	66.	128.	119.	81.	30.	29.	24.	15.	6.	0.	0.	0.	0.	498.	66.	100.	37.	50.						
SOUTHEAST		0.	0.	0.	0.	79.	179.	207.	200.	170.	126.	72.	20.	6.	0.	0.	0.	0.	1059.	113.	185.	55.	83.						
HORIZ.		0.	0.	0.	0.	16.	60.	98.	123.	131.	123.	98.	60.	16.	0.	0.	0.	0.	723.	85.	134.	44.	63.						
																				DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS					
																				1406.		142.		237.		66.		103.	
																				1059.		113.		185.		55.		83.	
																				498.		66.		100.		37.		50.	
																				190.		40.		53.		27.		32.	
																				177.		39.		51.		27.		31.	
																				190.		40.		53.		27.		32.	
																				498.		66.		100.		37.		50.	
																				1059.		113.		185.		55.		83.	
																				723.		85.		134.		44.		63.	
																												</	

LOCATION	RAPID CITY, S.D.			LATITUDE 44 DEGREES 9 MINUTES																							
MONTH	4	HO	3145.	TOD	48.	TOT	44.	KT	.594	KD	.175																
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY								
																		SATGS	SATGD	SATGS	SATGD						
SOUTH	0.	0.	8.	24.	65.	104.	136.	156.	163.	156.	136.	104.	65.	24.	8.	0.	0.	1146.	113.	166.	81.	111.					
SOUTHWEST	0.	0.	8.	20.	31.	41.	49.	90.	132.	162.	178.	178.	158.	118.	49.	0.	0.	1215.	117.	173.	83.	115.					
WEST	0.	0.	8.	20.	31.	41.	49.	54.	56.	105.	145.	171.	178.	155.	77.	0.	0.	1090.	110.	160.	79.	108.					
NORTHWEST	0.	0.	8.	20.	31.	41.	49.	54.	56.	54.	56.	89.	111.	112.	64.	0.	0.	746.	90.	125.	68.	88.					
NORTH	0.	0.	18.	20.	31.	41.	49.	54.	56.	54.	49.	41.	31.	20.	18.	0.	0.	483.	76.	98.	60.	73.					
NORTHEAST	0.	0.	64.	112.	111.	89.	56.	54.	56.	54.	49.	41.	31.	20.	8.	0.	0.	746.	90.	125.	68.	88.					
EAST	0.	0.	77.	155.	178.	171.	145.	105.	56.	54.	49.	41.	31.	20.	8.	0.	0.	1090.	110.	160.	79.	108.					
SOUTHEAST	0.	0.	49.	118.	158.	178.	178.	162.	132.	90.	49.	41.	31.	20.	8.	0.	0.	1215.	117.	173.	83.	115.					
HORIZ.	0.	0.	21.	72.	123.	169.	205.	227.	235.	227.	205.	169.	123.	72.	21.	0.	0.	1869.	154.	241.	104.	153.					
MONTH	5	HO	3598.	TOD	58.	TOT	55.	KT	.574	KD	.178																
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY								
																		SATGS	SATGD	SATGS	SATGD						
SOUTH	0.	3.	14.	25.	49.	83.	111.	129.	135.	129.	111.	83.	49.	25.	14.	3.	0.	965.	112.	153.	88.	113.					
SOUTHWEST	0.	3.	14.	25.	36.	46.	53.	76.	113.	140.	155.	156.	141.	110.	64.	7.	0.	1138.	121.	170.	94.	123.					
WEST	0.	3.	14.	25.	36.	46.	53.	58.	59.	103.	139.	163.	171.	157.	110.	14.	0.	1150.	122.	171.	94.	124.					
NORTHWEST	0.	3.	14.	25.	36.	46.	53.	58.	59.	58.	73.	102.	122.	126.	100.	15.	0.	888.	108.	145.	85.	108.					
NORTH	0.	8.	39.	37.	36.	46.	53.	58.	59.	58.	53.	46.	36.	37.	39.	8.	0.	611.	92.	118.	76.	92.					
NORTHEAST	0.	15.	100.	126.	122.	102.	73.	58.	59.	58.	53.	46.	36.	25.	14.	3.	0.	888.	108.	145.	85.	108.					
EAST	0.	14.	110.	157.	171.	163.	139.	103.	59.	58.	53.	46.	36.	25.	14.	3.	0.	1150.	122.	171.	94.	124.					
SOUTHEAST	0.	7.	64.	110.	141.	156.	155.	140.	113.	76.	53.	46.	36.	25.	14.	3.	0.	1138.	121.	170.	94.	123.					
HORIZ.	0.	6.	43.	92.	140.	182.	214.	235.	242.	235.	214.	182.	140.	92.	43.	6.	0.	2065.	173.	261.	125.	179.					
MONTH	6	HO	3765.	TOD	67.	TOT	64.	KT	.583	KD	.176																
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY								
																		SATGS	SATGD	SATGS	SATGD						
SOUTH	0.	5.	16.	27.	44.	77.	105.	122.	128.	122.	105.	77.	44.	27.	16.	5.	0.	920.	117.	154.	95.	119.					
SOUTHWEST	0.	5.	16.	27.	38.	47.	54.	72.	108.	136.	151.	152.	138.	109.	67.	16.	0.	1135.	128.	175.	103.	132.					
WEST	0.	5.	16.	27.	38.	47.	54.	59.	60.	104.	140.	165.	173.	161.	121.	36.	0.	1207.	132.	182.	105.	137.					
NORTHWEST	0.	5.	16.	27.	38.	47.	54.	59.	60.	59.	80.	109.	130.	135.	113.	38.	0.	969.	119.	159.	97.	122.					
NORTH	0.	21.	48.	45.	38.	47.	54.	59.	60.	59.	54.	47.	38.	45.	48.	21.	0.	685.	104.	132.	87.	105.					
NORTHEAST	0.	38.	113.	135.	130.	109.	80.	59.	60.	59.	54.	47.	38.	27.	16.	5.	0.	969.	119.	159.	97.	122.					
EAST	0.	36.	121.	161.	173.	165.	140.	104.	60.	59.	54.	47.	38.	27.	16.	5.	0.	1207.	132.	182.	105.	137.					
SOUTHEAST	0.	16.	67.	109.	138.	152.	151.	136.	108.	72.	54.	47.	38.	27.	16.	5.	0.	1135.	128.	175.	103.	132.					
HORIZ.	0.	12.	53.	102.	149.	191.	223.	243.	250.	243.	223.	191.	149.	102.	53.	12.	0.	2196.	185.	275.	139.	196.					

LOCATION	RAPID CITY, S.D.	LATITUDE	44 DEGREES	9 MINUTES																
MONTH	7	HO	3597.	TOD	76.	TOT	72.	KT	71.	KT	70.	KT	69.	KT	68.	KT	67.	KT	66.	KT
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		
																		SATGS	DAYTIME SATGD	SAG/ALL DAY SATGD
SOUTH	0.	3.	13.	25.	50.	87.	117.	137.	144.	137.	117.	87.	50.	25.	13.	3.	0.	1010.	132.	175.
SOUTHWEST	0.	3.	13.	25.	36.	46.	53.	78.	119.	149.	166.	167.	151.	118.	68.	8.	0.	1201.	143.	194.
WEST	0.	3.	13.	25.	36.	46.	53.	58.	59.	108.	149.	176.	185.	170.	118.	15.	0.	1215.	144.	195.
NORTHWEST	0.	3.	13.	25.	36.	46.	53.	58.	59.	58.	75.	109.	132.	136.	107.	15.	0.	926.	128.	167.
NORTH	0.	9.	41.	38.	36.	46.	53.	58.	59.	58.	53.	46.	36.	38.	41.	9.	0.	621.	111.	137.
NORTHEAST	0.	15.	107.	136.	132.	109.	75.	58.	59.	58.	53.	46.	36.	25.	13.	3.	0.	926.	128.	167.
EAST	0.	15.	118.	170.	185.	176.	149.	108.	59.	58.	53.	46.	36.	25.	13.	3.	0.	1215.	144.	195.
SOUTHEAST	0.	8.	68.	118.	151.	167.	166.	149.	119.	78.	53.	46.	36.	25.	13.	3.	0.	1201.	143.	194.
HORIZ.	0.	6.	45.	97.	149.	194.	229.	251.	259.	251.	229.	194.	149.	97.	45.	6.	0.	2201.	198.	292.

MONTH	8	HO	3124.	TOD	75.	TOT	71.	KT	70.	KT	69.	KT	68.	KT	67.	KT	66.	KT	65.	KT
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		
																		SATGS	DAYTIME SATGD	SAG/ALL DAY SATGD
SOUTH	0.	0.	7.	23.	66.	108.	142.	164.	171.	164.	142.	108.	66.	23.	7.	0.	0.	1191.	147.	202.
SOUTHWEST	0.	0.	7.	19.	31.	41.	49.	93.	137.	170.	188.	187.	166.	122.	48.	0.	0.	1257.	151.	209.
WEST	0.	0.	7.	19.	31.	41.	49.	54.	55.	108.	152.	180.	187.	160.	75.	0.	0.	1119.	143.	194.
NORTHWEST	0.	0.	7.	19.	31.	41.	49.	54.	55.	54.	56.	92.	116.	116.	63.	0.	0.	754.	120.	155.
NORTH	0.	0.	18.	19.	31.	41.	49.	54.	55.	54.	49.	41.	31.	19.	18.	0.	0.	478.	104.	126.
NORTHEAST	0.	0.	63.	116.	116.	92.	56.	54.	55.	54.	49.	41.	31.	19.	7.	0.	0.	754.	120.	155.
EAST	0.	0.	75.	160.	187.	180.	152.	108.	55.	54.	49.	41.	31.	19.	7.	0.	0.	1119.	143.	194.
SOUTHEAST	0.	0.	48.	122.	166.	187.	188.	170.	137.	93.	49.	41.	31.	19.	7.	0.	0.	1257.	151.	209.
HORIZ.	0.	0.	21.	73.	127.	176.	214.	238.	246.	238.	214.	176.	127.	73.	21.	0.	0.	1944.	192.	282.

MONTH	9	HO	2450.	TOD	65.	TOT	60.	KT	60.	KT	59.	KT	58.	KT	57.	KT	56.	KT	55.	KT
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		
																		SATGS	DAYTIME SATGD	SAG/ALL DAY SATGD
SOUTH	0.	0.	0.	31.	83.	132.	170.	195.	203.	195.	170.	132.	83.	31.	0.	0.	0.	1423.	161.	236.
SOUTHWEST	0.	0.	0.	11.	23.	33.	33.	56.	110.	158.	192.	209.	205.	173.	103.	0.	0.	1273.	151.	218.
WEST	0.	0.	0.	11.	23.	33.	41.	46.	48.	104.	150.	177.	176.	122.	0.	0.	0.	931.	128.	176.
NORTHWEST	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	65.	88.	75.	0.	0.	0.	519.	100.	127.
NORTH	0.	0.	0.	11.	23.	33.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.	357.	89.	108.
NORTHEAST	0.	0.	0.	75.	88.	65.	41.	46.	48.	46.	41.	33.	23.	11.	0.	0.	0.	519.	100.	127.
EAST	0.	0.	0.	122.	176.	177.	150.	104.	48.	46.	41.	33.	23.	11.	0.	0.	0.	931.	128.	176.
SOUTHEAST	0.	0.	0.	103.	173.	205.	209.	192.	158.	110.	56.	33.	23.	11.	0.	0.	0.	1273.	151.	218.
HORIZ.	0.	0.	1.	36.	92.	142.	182.	207.	216.	207.	182.	142.	92.	36.	1.	0.	0.	1538.	169.	249.

LOCATION		RAPID CITY, S.D.			LATITUDE 44 DEGREES			9 MINUTES														
MONTH 10	HO	1753.	TOD	53.	TOT	49.	KT	.624	KD	.168												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	7.	83.	145.	189.	217.	226.	217.	189.	145.	83.	7.	0.	0.	0.	1507.	163.	252.	97.	137.
SOUTHWEST	0.	0.	0.	2.	13.	24.	68.	124.	171.	205.	218.	205.	151.	15.	0.	0.	0.	1197.	140.	211.	87.	119.
WEST	0.	0.	0.	2.	13.	24.	32.	37.	39.	95.	138.	160.	138.	16.	0.	0.	0.	694.	103.	145.	71.	90.
NORTHWEST	0.	0.	0.	2.	13.	24.	32.	37.	39.	37.	32.	34.	52.	9.	0.	0.	0.	313.	76.	94.	59.	67.
NORTH	0.	0.	0.	2.	13.	24.	32.	37.	39.	37.	32.	24.	13.	2.	0.	0.	0.	257.	72.	87.	57.	64.
NORTHEAST	0.	0.	0.	9.	52.	34.	32.	37.	39.	37.	32.	24.	13.	2.	0.	0.	0.	313.	76.	94.	59.	67.
EAST	0.	0.	0.	16.	138.	160.	138.	95.	39.	37.	32.	24.	13.	2.	0.	0.	0.	694.	103.	145.	71.	90.
SOUTHEAST	0.	0.	0.	15.	151.	205.	218.	205.	171.	124.	68.	24.	13.	2.	0.	0.	0.	1197.	140.	211.	87.	119.
HORIZ.	0.	0.	0.	5.	49.	100.	140.	166.	174.	166.	140.	100.	49.	5.	0.	0.	0.	1093.	132.	197.	84.	113.

MONTH 11	HO	1190.	TOD	39.	TOT	35.	KT	.566	KD	.179												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	0.	41.	122.	172.	200.	210.	200.	172.	122.	41.	0.	0.	0.	0.	1281.	145.	232.	76.	110.
SOUTHWEST	0.	0.	0.	0.	5.	20.	67.	116.	157.	184.	189.	162.	67.	0.	0.	0.	0.	968.	119.	185.	66.	92.
WEST	0.	0.	0.	0.	5.	15.	23.	28.	30.	76.	109.	115.	57.	0.	0.	0.	0.	459.	77.	108.	50.	62.
NORTHWEST	0.	0.	0.	0.	5.	15.	23.	28.	30.	28.	23.	15.	16.	0.	0.	0.	0.	185.	54.	67.	41.	46.
NORTH	0.	0.	0.	0.	5.	15.	23.	28.	30.	28.	23.	15.	5.	0.	0.	0.	0.	174.	53.	65.	41.	45.
NORTHEAST	0.	0.	0.	0.	16.	15.	23.	28.	30.	28.	23.	15.	5.	0.	0.	0.	0.	185.	54.	67.	41.	46.
EAST	0.	0.	0.	0.	57.	115.	109.	76.	30.	28.	23.	15.	5.	0.	0.	0.	0.	459.	77.	108.	50.	62.
SOUTHEAST	0.	0.	0.	0.	67.	162.	189.	184.	157.	116.	67.	20.	5.	0.	0.	0.	0.	968.	119.	185.	66.	92.
HORIZ.	0.	0.	0.	0.	14.	55.	91.	115.	123.	115.	91.	55.	14.	0.	0.	0.	0.	674.	95.	141.	57.	75.

MONTH 12	HO	984.	TOD	29.	TOT	26.	KT	.588	KD	.176												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	0.	15.	121.	182.	215.	226.	215.	182.	121.	15.	0.	0.	0.	0.	1291.	144.	237.	67.	101.
SOUTHWEST	0.	0.	0.	0.	3.	21.	72.	124.	168.	195.	197.	156.	23.	0.	0.	0.	0.	958.	114.	184.	56.	82.
WEST	0.	0.	0.	0.	3.	12.	20.	25.	27.	75.	108.	107.	19.	0.	0.	0.	0.	395.	64.	93.	38.	49.
NORTHWEST	0.	0.	0.	0.	3.	12.	20.	25.	27.	25.	20.	12.	5.	0.	0.	0.	0.	147.	42.	53.	30.	34.
NORTH	0.	0.	0.	0.	3.	12.	20.	25.	27.	25.	20.	12.	3.	0.	0.	0.	0.	145.	42.	52.	30.	34.
NORTHEAST	0.	0.	0.	0.	5.	12.	20.	25.	27.	25.	20.	12.	3.	0.	0.	0.	0.	147.	42.	53.	30.	34.
EAST	0.	0.	0.	0.	19.	107.	108.	75.	27.	25.	20.	12.	3.	0.	0.	0.	0.	395.	64.	93.	38.	49.
SOUTHEAST	0.	0.	0.	0.	23.	156.	197.	195.	168.	124.	72.	21.	3.	0.	0.	0.	0.	958.	114.	184.	56.	82.
HORIZ.	0.	0.	0.	0.	5.	43.	80.	104.	113.	104.	80.	43.	5.	0.	0.	0.	0.	578.	80.	122.	44.	59.



ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	142.	138.	131.	113.	112.	117.	132.	147.	161.	163.	145.	144.	137.
SOUTHWEST	113.	116.	121.	117.	121.	128.	143.	151.	151.	140.	119.	114.	128.
WEST	66.	80.	97.	110.	122.	132.	144.	143.	128.	103.	77.	64.	105.
NORTHWEST	40.	51.	69.	90.	108.	119.	128.	120.	100.	76.	54.	42.	83.
NORTH	39.	46.	58.	76.	92.	104.	111.	104.	89.	72.	53.	42.	74.
NORTHEAST	40.	51.	69.	90.	108.	119.	128.	120.	100.	76.	54.	42.	83.
EAST	66.	80.	97.	110.	122.	132.	144.	143.	128.	103.	77.	64.	105.
SOUTHEAST	113.	116.	121.	117.	121.	128.	143.	151.	151.	140.	119.	114.	128.
HORIZ.	85.	108.	137.	154.	173.	185.	198.	192.	169.	132.	95.	80.	142.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	237.	229.	209.	166.	153.	154.	175.	202.	236.	252.	232.	237.	207.
SOUTHWEST	185.	188.	191.	173.	170.	175.	194.	209.	218.	211.	185.	184.	190.
WEST	100.	122.	148.	160.	171.	182.	195.	194.	176.	145.	108.	93.	150.
NORTHWEST	53.	70.	97.	125.	145.	159.	167.	155.	127.	94.	67.	53.	109.
NORTH	51.	62.	76.	98.	118.	132.	137.	126.	108.	87.	65.	52.	93.
NORTHEAST	53.	70.	97.	125.	145.	159.	167.	155.	127.	94.	67.	53.	109.
EAST	100.	122.	148.	160.	171.	182.	195.	194.	176.	145.	108.	93.	150.
SOUTHEAST	185.	188.	191.	173.	170.	175.	194.	209.	218.	211.	185.	184.	190.
HORIZ.	134.	175.	220.	241.	261.	275.	292.	282.	249.	197.	141.	122.	216.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	66.	73.	80.	81.	88.	95.	107.	112.	109.	97.	76.	67.	88.
SOUTHWEST	55.	63.	74.	83.	94.	103.	113.	114.	104.	87.	66.	56.	84.
WEST	37.	47.	63.	79.	94.	105.	114.	109.	92.	71.	50.	38.	75.
NORTHWEST	27.	34.	48.	68.	85.	97.	104.	97.	78.	59.	41.	30.	64.
NORTH	27.	32.	43.	60.	76.	87.	94.	87.	73.	57.	41.	30.	59.
NORTHEAST	27.	34.	48.	68.	85.	97.	104.	97.	78.	59.	41.	30.	64.
EAST	37.	47.	63.	79.	94.	105.	114.	109.	92.	71.	50.	38.	75.
SOUTHEAST	55.	63.	74.	83.	94.	103.	113.	114.	104.	87.	66.	56.	84.
HORIZ.	44.	60.	82.	104.	125.	139.	148.	137.	113.	84.	57.	44.	95.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	103.	113.	119.	111.	113.	119.	133.	143.	146.	137.	110.	101.	121.
SOUTHWEST	83.	95.	110.	115.	123.	132.	145.	147.	137.	119.	92.	82.	115.
WEST	50.	66.	88.	108.	124.	137.	146.	139.	117.	90.	62.	49.	98.
NORTHWEST	32.	43.	62.	88.	108.	122.	128.	116.	92.	67.	46.	34.	78.
NORTH	31.	39.	52.	73.	92.	105.	110.	100.	82.	64.	45.	34.	69.
NORTHEAST	32.	43.	62.	88.	108.	122.	128.	116.	92.	67.	46.	34.	78.
EAST	50.	66.	88.	108.	124.	137.	146.	139.	117.	90.	62.	49.	98.
SOUTHEAST	83.	95.	110.	115.	123.	132.	145.	147.	137.	119.	92.	82.	115.
HORIZ.	63.	89.	124.	153.	179.	196.	205.	188.	153.	113.	75.	59.	133.

LOCATION	RIVERSIDE, CALIFORNIA				LATITUDE 33 DEGREES 57 MINUTES																	
MONTH 1	HO 1759.	TOD 55.	TOT 53.	KT .589	KD .176																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	1.	83.	140.	178.	201.	208.	201.	178.	140.	83.	1.	0.	0.	0.	1414.	163.	251.	99.	136.
SOUTHWEST	0.	0.	0.	1.	12.	24.	70.	118.	159.	189.	201.	190.	137.	1.	0.	0.	0.	1102.	139.	207.	89.	117.
WEST	0.	0.	0.	1.	12.	24.	33.	39.	41.	89.	126.	143.	118.	1.	0.	0.	0.	624.	103.	142.	73.	90.
NORTHWEST	0.	0.	0.	1.	12.	24.	33.	39.	41.	39.	33.	25.	37.	1.	0.	0.	0.	283.	77.	94.	62.	70.
NORTH	0.	0.	0.	1.	12.	24.	33.	39.	41.	39.	33.	24.	12.	1.	0.	0.	0.	257.	75.	91.	61.	68.
NORTHEAST	0.	0.	0.	1.	37.	25.	33.	39.	41.	39.	33.	24.	12.	1.	0.	0.	0.	283.	77.	94.	62.	70.
EAST	0.	0.	0.	1.	118.	143.	126.	89.	41.	39.	33.	24.	12.	1.	0.	0.	0.	624.	103.	142.	73.	90.
SOUTHEAST	0.	0.	0.	1.	137.	190.	201.	189.	159.	118.	70.	24.	12.	1.	0.	0.	0.	1102.	139.	207.	89.	117.
HORIZ.	0.	0.	0.	1.	42.	94.	135.	161.	170.	161.	135.	94.	42.	1.	0.	0.	0.	1035.	134.	198.	86.	113.
MONTH 2	HO 2284.	TOD 57.	TOT 54.	KT .617	KD .170																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	27.	91.	138.	173.	195.	203.	195.	173.	138.	91.	27.	0.	0.	0.	1452.	158.	241.	101.	139.
SOUTHWEST	0.	0.	0.	6.	19.	31.	61.	112.	157.	191.	208.	205.	171.	69.	0.	0.	0.	1232.	143.	213.	94.	126.
WEST	0.	0.	0.	6.	19.	31.	41.	47.	49.	102.	145.	170.	162.	75.	0.	0.	0.	846.	116.	164.	81.	103.
NORTHWEST	0.	0.	0.	6.	19.	31.	41.	47.	49.	47.	41.	53.	70.	39.	0.	0.	0.	442.	88.	113.	68.	80.
NORTH	0.	0.	0.	6.	19.	31.	41.	47.	49.	47.	41.	31.	19.	6.	0.	0.	0.	336.	80.	99.	65.	74.
NORTHEAST	0.	0.	0.	39.	70.	53.	41.	47.	49.	47.	41.	31.	19.	6.	0.	0.	0.	442.	88.	113.	68.	80.
EAST	0.	0.	0.	75.	162.	170.	145.	102.	49.	47.	41.	31.	19.	6.	0.	0.	0.	846.	116.	164.	81.	103.
SOUTHEAST	0.	0.	0.	69.	171.	205.	208.	191.	157.	112.	61.	31.	19.	6.	0.	0.	0.	1232.	143.	213.	94.	126.
HORIZ.	0.	0.	0.	16.	75.	131.	175.	202.	212.	202.	175.	131.	75.	16.	0.	0.	0.	1410.	155.	236.	99.	136.
MONTH 3	HO 2835.	TOD 61.	TOT 56.	KT .643	KD .163																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	32.	79.	122.	155.	177.	184.	177.	155.	122.	79.	32.	0.	0.	0.	1313.	145.	213.	99.	133.
SOUTHWEST	0.	0.	0.	12.	26.	38.	48.	54.	56.	146.	183.	203.	205.	181.	0.	0.	0.	1261.	141.	207.	97.	130.
WEST	0.	0.	0.	12.	26.	38.	48.	54.	56.	113.	160.	190.	193.	144.	0.	0.	0.	1035.	127.	181.	90.	117.
NORTHWEST	0.	0.	0.	12.	26.	38.	48.	54.	56.	54.	51.	86.	107.	92.	0.	0.	0.	624.	101.	133.	77.	93.
NORTH	0.	0.	0.	12.	26.	38.	48.	54.	56.	54.	48.	38.	26.	12.	0.	0.	0.	412.	87.	109.	70.	81.
NORTHEAST	0.	0.	0.	92.	107.	86.	51.	54.	56.	54.	48.	38.	26.	12.	0.	0.	0.	624.	101.	133.	77.	93.
EAST	0.	0.	0.	144.	193.	190.	160.	113.	56.	54.	48.	38.	26.	12.	0.	0.	0.	1035.	127.	181.	90.	117.
SOUTHEAST	0.	0.	0.	119.	181.	205.	203.	183.	146.	98.	48.	38.	26.	12.	0.	0.	0.	1261.	141.	207.	97.	130.
HORIZ.	0.	0.	0.	46.	111.	169.	215.	244.	253.	244.	215.	169.	111.	46.	0.	0.	0.	1822.	177.	272.	115.	163.

LOCATION	RIVERSIDE, CALIFORNIA										LATITUDE 33 DEGREES 57 MINUTES									
MONTH	4	HO 3339.	TOD 65.	TOT 59.	KT .594	KD .175														
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	0.	0.	6.	19.	50.	85.	112.	130.	136.	130.	112.	85.	50.	19.	6.	0.	0.			
SOUTHWEST	0.	0.	6.	19.	33.	44.	53.	73.	114.	145.	162.	164.	148.	110.	35.	0.	0.			
WEST	0.	0.	6.	19.	33.	44.	53.	59.	61.	109.	149.	174.	178.	151.	56.	0.	0.			
NORTHWEST	0.	0.	6.	19.	33.	44.	53.	59.	61.	59.	79.	107.	123.	116.	47.	0.	0.			
NORTH	0.	0.	15.	28.	33.	44.	53.	59.	61.	59.	53.	44.	33.	24.	15.	0.	0.			
NORTHEAST	0.	0.	47.	116.	123.	107.	79.	59.	61.	59.	53.	44.	33.	19.	6.	0.	0.			
EAST	0.	0.	56.	151.	178.	174.	149.	109.	61.	59.	53.	44.	33.	19.	6.	0.	0.			
SOUTHEAST	0.	0.	35.	110.	148.	164.	162.	145.	114.	73.	53.	44.	33.	19.	6.	0.	0.			
HORIZ.	0.	0.	15.	70.	129.	181.	222.	247.	256.	247.	222.	181.	129.	70.	15.	0.	0.			
MONTH 5	HO 3633.	TOD 69.	TOT 62.	KT .635	KD .165															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	0.	0.	10.	23.	36.	65.	92.	109.	115.	109.	92.	65.	36.	23.	10.	0.	0.			
SOUTHWEST	0.	0.	10.	23.	36.	47.	56.	61.	100.	133.	153.	157.	144.	111.	55.	0.	0.			
WEST	0.	0.	10.	23.	36.	47.	56.	61.	63.	115.	157.	185.	193.	173.	102.	0.	0.			
NORTHWEST	0.	0.	10.	23.	36.	47.	56.	61.	63.	65.	102.	132.	151.	147.	95.	0.	0.			
NORTH	0.	0.	38.	48.	41.	47.	56.	61.	63.	61.	56.	47.	41.	48.	38.	0.	0.			
NORTHEAST	0.	0.	95.	147.	151.	132.	102.	65.	63.	61.	56.	47.	36.	23.	10.	0.	0.			
EAST	0.	0.	102.	173.	193.	185.	157.	115.	63.	61.	56.	47.	36.	23.	10.	0.	0.			
SOUTHEAST	0.	0.	55.	111.	144.	157.	153.	133.	100.	61.	56.	47.	36.	23.	10.	0.	0.			
HORIZ.	0.	0.	33.	93.	154.	208.	249.	275.	284.	275.	249.	208.	154.	93.	33.	0.	0.			
MONTH 6	HO 3732.	TOD 74.	TOT 65.	KT .667	KD .157															
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	0.	1.	12.	24.	37.	55.	83.	101.	107.	101.	83.	55.	37.	24.	12.	1.	0.			
SOUTHWEST	0.	1.	12.	24.	37.	48.	56.	61.	94.	129.	151.	156.	144.	113.	60.	1.	0.			
WEST	0.	1.	12.	24.	37.	48.	56.	61.	63.	118.	163.	194.	204.	185.	119.	1.	0.			
NORTHWEST	0.	1.	12.	24.	37.	48.	56.	61.	63.	74.	113.	146.	166.	163.	115.	1.	0.			
NORTH	0.	1.	50.	60.	52.	48.	56.	61.	63.	61.	56.	48.	52.	60.	50.	1.	0.			
NORTHEAST	0.	1.	115.	163.	166.	146.	113.	74.	63.	61.	56.	48.	37.	24.	12.	1.	0.			
EAST	0.	1.	119.	185.	204.	194.	163.	118.	63.	61.	56.	48.	37.	24.	12.	1.	0.			
SOUTHEAST	0.	1.	60.	113.	144.	156.	151.	129.	94.	61.	56.	48.	37.	24.	12.	1.	0.			
HORIZ.	0.	2.	41.	104.	167.	222.	265.	292.	302.	292.	265.	222.	167.	104.	41.	2.	0.			
DAILY TOTAL RADIATION	732.																			
SAG/DAYTIME SATGS	116.																			
DAYTIME SATGS	148.																			
SAG/ALL DAY SATGS	90.																			
DAYTIME SATGS	102.																			
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LOCATION	RIVERSIDE, CALIFORNIA				LATITUDE				33 DEGREES				57 MINUTES															
MONTH 10	HO	2250.	TOD	71.	TOT	63.	KT	.639	KD	.164																		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD								
SOUTH	0.	0.	0.	25.	93.	144.	181.	205.	212.	205.	181.	144.	93.	25.	0.	0.	0.	1508.	176.	262.	112.	151.						
SOUTHWEST	0.	0.	0.	5.	19.	31.	62.	117.	164.	200.	218.	213.	175.	63.	0.	0.	0.	1266.	159.	232.	104.	137.						
WEST	0.	0.	0.	5.	19.	31.	40.	46.	48.	105.	150.	176.	165.	67.	0.	0.	0.	852.	131.	179.	91.	113.						
NORTHWEST	0.	0.	0.	5.	19.	31.	40.	46.	48.	46.	40.	53.	70.	35.	0.	0.	0.	433.	101.	126.	77.	89.						
NORTH	0.	0.	0.	5.	19.	31.	40.	46.	48.	46.	40.	31.	19.	5.	0.	0.	0.	329.	94.	113.	7.	83.						
NORTHEAST	0.	0.	0.	35.	70.	53.	40.	46.	48.	46.	40.	31.	19.	5.	0.	0.	0.	433.	101.	126.	7.	89.						
EAST	0.	0.	0.	67.	165.	176.	150.	105.	48.	46.	40.	31.	19.	5.	0.	0.	0.	852.	131.	179.	91.	113.						
SOUTHEAST	0.	0.	0.	63.	175.	213.	218.	200.	164.	117.	62.	31.	19.	5.	0.	0.	0.	1266.	159.	232.	104.	137.						
HORIZ.	0.	0.	0.	15.	75.	133.	179.	208.	218.	208.	179.	133.	75.	15.	0.	0.	0.	1438.	171.	254.	110.	147.						
MONTH 11	HO	1746.	TOD	63.	TOT	59.	KT	.606	KD	.173																		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD								
SOUTH	0.	0.	0.	1.	84.	145.	185.	209.	217.	209.	185.	145.	84.	1.	0.	0.	0.	1465.	175.	266.	106.	145.						
SOUTHWEST	0.	0.	0.	1.	12.	24.	72.	122.	165.	196.	209.	197.	140.	1.	0.	0.	0.	1137.	150.	220.	96.	126.						
WEST	0.	0.	0.	1.	12.	24.	33.	39.	41.	91.	130.	147.	120.	1.	0.	0.	0.	636.	112.	151.	80.	96.						
NORTHWEST	0.	0.	0.	1.	12.	24.	33.	39.	41.	39.	33.	25.	37.	1.	0.	0.	0.	282.	85.	102.	68.	76.						
NORTH	0.	0.	0.	1.	12.	24.	33.	39.	41.	39.	33.	24.	12.	1.	0.	0.	0.	255.	83.	98.	67.	74.						
NORTHEAST	0.	0.	0.	1.	12.	24.	33.	39.	41.	39.	33.	24.	12.	1.	0.	0.	0.	282.	85.	102.	68.	76.						
EAST	0.	0.	0.	1.	37.	25.	33.	39.	41.	39.	33.	24.	12.	1.	0.	0.	0.	636.	112.	151.	80.	96.						
SOUTHEAST	0.	0.	0.	1.	140.	197.	209.	196.	165.	122.	72.	24.	12.	1.	0.	0.	0.	1137.	150.	220.	96.	126.						
HORIZ.	0.	0.	0.	1.	42.	95.	138.	165.	175.	165.	138.	95.	42.	1.	0.	0.	0.	1057.	144.	209.	93.	121.						
MONTH 12	HO	1551.	TOD	57.	TOT	56.	KT	.626	KD	.168																		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD								
SOUTH	0.	0.	0.	0.	82.	154.	199.	225.	233.	225.	199.	154.	82.	0.	0.	0.	0.	1552.	180.	280.	105.	146.						
SOUTHWEST	0.	0.	0.	0.	9.	27.	78.	131.	176.	208.	220.	204.	130.	0.	0.	0.	0.	1182.	151.	227.	94.	124.						
WEST	0.	0.	0.	0.	9.	21.	30.	35.	37.	90.	130.	146.	107.	0.	0.	0.	0.	605.	105.	144.	75.	91.						
NORTHWEST	0.	0.	0.	0.	9.	21.	30.	35.	37.	35.	30.	21.	27.	0.	0.	0.	0.	245.	77.	92.	63.	70.						
NORTH	0.	0.	0.	0.	9.	21.	30.	35.	37.	35.	30.	21.	9.	0.	0.	0.	0.	227.	75.	90.	63.	69.						
NORTHEAST	0.	0.	0.	0.	27.	21.	30.	35.	37.	35.	30.	21.	9.	0.	0.	0.	0.	245.	77.	92.	63.	70.						
EAST	0.	0.	0.	0.	107.	146.	130.	90.	37.	35.	30.	21.	9.	0.	0.	0.	0.	605.	105.	144.	75.	91.						
SOUTHEAST	0.	0.	0.	0.	130.	204.	220.	208.	176.	131.	78.	27.	9.	0.	0.	0.	0.	1182.	151.	227.	94.	124.						
HORIZ.	0.	0.	0.	0.	32.	85.	129.	157.	167.	157.	129.	85.	32.	0.	0.	0.	0.	972.	134.	197.	87.	112.						

LOCATION RIVERSIDE, CALIFORNIA LATITUDE 33 DEGREES 57 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	163.	158.	145.	120.	116.	116.	128.	145.	170.	176.	175.	180.	149.
SOUTHWEST	139.	143.	141.	130.	134.	137.	147.	157.	166.	159.	150.	151.	146.
WEST	103.	116.	127.	129.	141.	148.	155.	156.	150.	131.	112.	105.	131.
NORTHWEST	77.	88.	101.	113.	128.	136.	141.	135.	121.	101.	85.	77.	108.
NORTH	75.	80.	87.	95.	107.	116.	119.	113.	106.	94.	83.	75.	96.
NORTHEAST	77.	88.	101.	113.	128.	136.	141.	135.	121.	101.	85.	77.	108.
EAST	103.	116.	127.	129.	141.	148.	155.	156.	150.	131.	112.	105.	131.
SOUTHEAST	139.	143.	141.	130.	134.	137.	147.	157.	166.	159.	150.	151.	146.
HORIZ.	134.	155.	177.	182.	205.	217.	223.	220.	206.	171.	144.	134.	181.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	251.	241.	213.	165.	151.	148.	164.	194.	240.	262.	266.	280.	215.
SOUTHWEST	207.	213.	207.	183.	183.	185.	198.	216.	233.	232.	220.	227.	209.
WEST	142.	164.	181.	182.	197.	205.	213.	213.	205.	179.	151.	144.	181.
NORTHWEST	94.	113.	133.	151.	172.	184.	187.	176.	154.	126.	102.	92.	140.
NORTH	91.	99.	109.	120.	137.	147.	149.	138.	128.	113.	98.	90.	118.
NORTHEAST	94.	113.	133.	151.	172.	184.	187.	176.	154.	126.	102.	92.	140.
EAST	142.	164.	181.	182.	197.	205.	213.	213.	205.	179.	151.	144.	181.
SOUTHEAST	207.	213.	207.	183.	183.	185.	198.	216.	233.	232.	220.	227.	209.
HORIZ.	198.	236.	272.	277.	310.	327.	332.	326.	304.	254.	209.	197.	270.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	99.	101.	99.	89.	89.	90.	95.	103.	113.	112.	106.	105.	100.
SOUTHWEST	89.	94.	97.	95.	99.	102.	106.	110.	111.	104.	96.	94.	100.
WEST	73.	81.	90.	94.	104.	109.	111.	109.	103.	91.	80.	75.	93.
NORTHWEST	62.	68.	77.	85.	96.	102.	102.	88.	88.	77.	68.	63.	82.
NORTH	61.	65.	70.	76.	84.	89.	90.	86.	81.	74.	67.	63.	75.
NORTHEAST	62.	68.	77.	85.	96.	102.	102.	97.	88.	77.	68.	63.	82.
EAST	73.	81.	90.	94.	104.	109.	111.	109.	103.	91.	80.	75.	93.
SOUTHEAST	89.	94.	97.	95.	99.	102.	106.	110.	111.	104.	96.	94.	100.
HORIZ.	86.	99.	115.	123.	141.	150.	150.	144.	131.	110.	93.	87.	119.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	136.	139.	133.	114.	110.	109.	116.	130.	148.	151.	145.	146.	131.
SOUTHWEST	117.	126.	130.	124.	128.	130.	135.	142.	144.	137.	126.	124.	130.
WEST	90.	103.	117.	123.	136.	142.	144.	140.	130.	113.	96.	91.	119.
NORTHWEST	70.	80.	93.	106.	122.	130.	129.	120.	105.	89.	76.	70.	99.
NORTH	68.	74.	81.	89.	101.	108.	107.	99.	91.	83.	74.	69.	87.
NORTHEAST	70.	80.	93.	106.	122.	130.	129.	120.	105.	89.	76.	70.	99.
EAST	90.	103.	117.	123.	136.	142.	144.	140.	130.	113.	96.	91.	119.
SOUTHEAST	117.	126.	130.	124.	128.	130.	135.	142.	144.	137.	126.	124.	130.
HORIZ.	113.	136.	165.	175.	201.	215.	213.	202.	180.	147.	121.	112.	165.

[illegible]

MONTH	2	HO	1712.	TOD	17.	TOT	14.	KT	.629	KD	.167					
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	7.	86.	148.	193.	221.	230.	221.	193.	148.	86.	7.	0.	0.
SOUTHWEST	0.	0.	0.	2.	13.	23.	69.	126.	174.	208.	222.	210.	157.	16.	0.	0.
WEST	0.	0.	0.	2.	13.	23.	31.	36.	38.	95.	140.	162.	143.	17.	0.	0.
NORTHWEST	0.	0.	0.	2.	13.	23.	31.	36.	38.	36.	31.	33.	53.	9.	0.	0.
NORTH	0.	0.	0.	2.	13.	23.	31.	36.	38.	36.	31.	23.	13.	2.	0.	0.
NORTHEAST	0.	0.	0.	9.	53.	33.	31.	36.	38.	36.	31.	23.	13.	2.	0.	0.
EAST	0.	0.	0.	17.	143.	162.	140.	95.	38.	36.	31.	23.	13.	2.	0.	0.
SOUTHEAST	0.	0.	0.	16.	157.	210.	222.	208.	174.	126.	69.	23.	13.	2.	0.	0.
POLE.	0.	0.	0.	4.	49.	98.	138.	163.	171.	163.	138.	98.	49.	4.	0.	0.
DAILY TOTAL RADIATION												1541.	129.	221.	63.	103.
SAG/DAYTIME SATGS												1221.	106.	179.	53.	85.
SAG/ALL DAY SATGS												701.	68.	110.	36.	54.
DAILY TOTAL RADIATION												308.	39.	58.	23.	32.
SAG/DAYTIME SATGS												251.	35.	50.	22.	28.
SAG/ALL DAY SATGS												308.	39.	58.	23.	32.
DAILY TOTAL RADIATION												701.	68.	110.	36.	54.
SAG/DAYTIME SATGS												1221.	106.	179.	53.	85.
SAG/ALL DAY SATGS												1076.	95.	159.	48.	76.

MONTH	3	H0	2399.	T0D	30.	T0T	27.	KT	.614	KD	.171											
ORIENTATION																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY			
																	SATGS	SATGD	SATGS	SATGF		
SOUTH	0.	0.	0.	32.	84.	132.	169.	193.	201.	193.	169.	132.	84.	32.	0.	0.	0.	1421.	121.	195.	72.	110.
SOUTHWEST	0.	0.	0.	11.	22.	33.	58.	111.	156.	189.	206.	202.	172.	105.	0.	0.	0.	1264.	111.	177.	67.	101.
WEST	0.	0.	0.	11.	22.	33.	41.	46.	47.	101.	145.	173.	173.	123.	0.	0.	0.	915.	98.	136.	56.	80.
NORTHWEST	0.	0.	0.	11.	22.	33.	41.	46.	47.	46.	41.	61.	85.	75.	0.	0.	0.	508.	62.	89.	43.	56.
NORTH	0.	0.	0.	11.	22.	33.	41.	46.	47.	46.	41.	33.	22.	11.	0.	0.	0.	351.	52.	71.	3.	47.
NORTHEAST	0.	0.	0.	75.	85.	61.	41.	46.	47.	46.	41.	33.	22.	11.	0.	0.	0.	508.	62.	89.	43.	56.
EAST	0.	0.	0.	123.	173.	173.	145.	101.	47.	46.	41.	33.	22.	11.	0.	0.	0.	915.	88.	136.	56.	80.
SOUTHEAST	0.	0.	0.	105.	172.	202.	206.	189.	156.	111.	58.	33.	22.	11.	0.	0.	0.	1264.	111.	177.	67.	101.
ORIZ.	0.	0.	0.	36.	89.	137.	174.	198.	206.	198.	174.	137.	89.	36.	0.	0.	0.	1472.	124.	201.	74.	113.

LOCATION	ST. CLOUD, MINNESOTA										LATITUDE 45 DEGREES 34 MINUTES											
MONTH	4	HO	3111.	TOD	46.	TOT	43.	KT	.534	KD	.183											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SAT S SATGD		
SOUTH	0.	0.	8.	24.	60.	95.	123.	141.	147.	141.	123.	95.	60.	24.	8.	0.	0.	1051.	105.	154.	77.	104.
SOUTHWEST	0.	0.	8.	20.	31.	40.	48.	85.	120.	145.	158.	156.	138.	103.	44.	0.	0.	1096.	108.	158.	74.	107.
WEST	0.	0.	8.	20.	31.	40.	48.	52.	54.	52.	51.	78.	153.	133.	69.	0.	0.	980.	101.	146.	74.	100.
NORTHWEST	0.	0.	8.	20.	31.	40.	48.	52.	54.	52.	51.	78.	96.	97.	57.	0.	0.	685.	85.	116.	65.	83.
NORTH	0.	0.	17.	20.	31.	40.	48.	52.	54.	52.	48.	40.	31.	20.	17.	0.	0.	469.	73.	94.	58.	70.
NORTHEAST	0.	0.	57.	97.	96.	78.	51.	52.	54.	52.	48.	40.	31.	20.	8.	0.	0.	685.	85.	116.	65.	83.
EAST	0.	0.	69.	133.	153.	149.	128.	95.	54.	52.	48.	40.	31.	20.	8.	0.	0.	980.	101.	146.	74.	100.
SOUTHEAST	0.	0.	44.	103.	138.	156.	158.	145.	120.	85.	48.	40.	31.	20.	8.	0.	0.	1096.	108.	158.	78.	107.
HORIZ.	0.	0.	21.	65.	110.	150.	181.	200.	207.	200.	181.	150.	110.	65.	21.	0.	0.	1662.	140.	216.	96.	140.

MONTH	5	HO	3587.	TOD	59.	TOT	55.	KT	.530	KD	.184											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	4.	14.	25.	49.	81.	106.	122.	128.	122.	106.	81.	49.	25.	14.	4.	0.	931.	110.	149.	87.	111.
SOUTHWEST	0.	4.	14.	25.	36.	45.	52.	75.	107.	131.	143.	143.	129.	101.	59.	9.	0.	1073.	118.	163.	92.	120.
WEST	0.	4.	14.	25.	36.	45.	52.	56.	58.	56.	58.	127.	148.	154.	101.	18.	0.	1073.	118.	163.	92.	120.
NORTHWEST	0.	4.	14.	25.	36.	45.	52.	56.	58.	56.	67.	92.	110.	113.	91.	19.	0.	836.	105.	140.	84.	106.
NORTH	0.	10.	36.	34.	36.	45.	52.	56.	58.	56.	52.	45.	36.	34.	36.	10.	0.	596.	92.	117.	76.	91.
NORTHEAST	0.	19.	91.	113.	110.	92.	67.	56.	58.	56.	52.	45.	36.	25.	14.	4.	0.	836.	105.	140.	84.	106.
EAST	0.	18.	101.	141.	154.	148.	127.	96.	58.	56.	52.	45.	36.	25.	14.	4.	0.	1073.	118.	163.	92.	120.
SOUTHEAST	0.	9.	59.	101.	129.	143.	143.	131.	107.	75.	52.	45.	36.	25.	14.	4.	0.	1073.	118.	163.	92.	120.
HORIZ.	0.	7.	42.	86.	129.	167.	195.	214.	220.	214.	195.	167.	129.	86.	42.	7.	0.	1901.	163.	243.	120.	170.

MONTH	6	HO	3764.	TOD	68.	TOT	65.	KT	.533	KD	.183											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	6.	16.	27.	45.	75.	100.	116.	121.	116.	100.	75.	45.	27.	16.	6.	0.	891.	116.	152.	9.	119.
SOUTHWEST	0.	6.	16.	27.	37.	46.	53.	71.	103.	126.	139.	138.	125.	99.	62.	17.	0.	1067.	125.	168.	101.	129.
WEST	0.	6.	16.	27.	37.	46.	53.	57.	59.	57.	59.	127.	148.	154.	108.	38.	0.	1118.	128.	173.	103.	133.
NORTHWEST	0.	6.	16.	27.	37.	46.	53.	57.	59.	57.	73.	98.	115.	119.	101.	40.	0.	906.	116.	153.	96.	120.
NORTH	0.	22.	44.	41.	37.	46.	53.	57.	59.	57.	53.	46.	37.	41.	44.	22.	0.	663.	104.	131.	88.	105.
NORTHEAST	0.	40.	101.	119.	115.	98.	73.	57.	59.	57.	53.	46.	37.	27.	16.	6.	0.	906.	116.	153.	96.	120.
EAST	0.	38.	108.	143.	154.	148.	127.	97.	59.	57.	53.	46.	37.	27.	16.	6.	0.	1118.	128.	173.	103.	133.
SOUTHEAST	0.	17.	62.	99.	125.	138.	139.	126.	103.	71.	53.	46.	37.	27.	16.	6.	0.	1067.	125.	168.	101.	129.
HORIZ.	0.	14.	51.	94.	137.	173.	202.	220.	226.	220.	202.	173.	137.	94.	51.	14.	0.	2007.	175.	256.	134.	186.



LOCATION	ST. CLOUD, MINNESOTA	LATITUDE	45 DEGREES	34 MINUTES																						
MONTH	7	HO	3586.	TOD	74.	TOT	71.	KT	.573	KD									.178							
ORIENTATION	4	5	6	7	8	9	HOURLY SOLAR RADIATION								DAILY TOTAL RADIATION								SAG/DAYTIME		SAG/ALL DAY	
							10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD					
SOUTH	0.	4.	14.	25.	51.	86.	114.	132.	138.	132.	114.	86.	51.	25.	14.	4.	0.	988.	129.	170.	104.	130.				
SOUTHWEST	0.	4.	14.	25.	36.	45.	52.	78.	115.	142.	157.	157.	141.	110.	64.	10.	0.	1150.	137.	186.	110.	140.				
WEST	0.	4.	14.	25.	36.	45.	52.	57.	58.	102.	138.	162.	170.	156.	110.	20.	0.	1150.	137.	186.	110.	140.				
NORTHWEST	0.	4.	14.	25.	36.	45.	52.	57.	58.	57.	70.	99.	120.	125.	100.	20.	0.	882.	123.	160.	101.	124.				
NORTH	0.	11.	39.	35.	36.	45.	52.	57.	58.	57.	52.	45.	36.	35.	39.	11.	0.	610.	108.	133.	91.	107.				
NORTHEAST	0.	20.	100.	125.	120.	99.	70.	57.	58.	57.	52.	45.	36.	25.	14.	4.	0.	882.	123.	160.	101.	124.				
EAST	0.	20.	110.	156.	170.	162.	138.	102.	58.	57.	52.	45.	36.	25.	14.	4.	0.	1150.	137.	186.	110.	140.				
SOUTHEAST	0.	10.	64.	110.	141.	157.	157.	142.	115.	78.	52.	45.	36.	25.	14.	4.	0.	1150.	137.	186.	110.	140.				
HORIZ.	0.	7.	45.	92.	139.	180.	212.	232.	239.	232.	212.	180.	139.	92.	45.	7.	0.	2055.	187.	273.	141.	195.				

MONTH	8	HO	3090.	TOD	72.	TOT	68.	KT	570	KD	178											
ORIENTATION	4	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
		5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	8.	24.	63.	101.	132.	151.	158.	151.	132.	101.	63.	24.	8.	0.	0.	1116.	139.	190.	106.	136.
SOUTHWEST	0.	0.	8.	19.	31.	40.	48.	89.	128.	156.	170.	169.	149.	109.	44.	0.	0.	1160.	141.	195.	108.	138.
WEST	0.	0.	8.	19.	31.	40.	48.	53.	54.	100.	137.	161.	165.	142.	69.	0.	0.	1026.	133.	181.	103.	130.
NORTHWEST	0.	0.	8.	19.	31.	40.	48.	53.	54.	53.	52.	83.	103.	103.	57.	0.	0.	703.	114.	146.	92.	111.
NORTH	0.	0.	17.	19.	31.	40.	48.	53.	54.	53.	48.	40.	31.	19.	17.	0.	0.	469.	100.	122.	84.	96.
NORTHEAST	0.	0.	57.	103.	103.	83.	52.	53.	54.	53.	48.	40.	31.	19.	8.	0.	0.	703.	114.	146.	92.	111.
EAST	0.	0.	69.	142.	165.	161.	137.	100.	54.	53.	48.	40.	31.	19.	8.	0.	0.	1026.	133.	181.	103.	130.
SOUTHEAST	0.	0.	44.	109.	149.	169.	170.	156.	128.	89.	48.	40.	31.	19.	8.	0.	0.	1160.	141.	195.	108.	138.
HORIZ.	0.	0.	21.	67.	116.	159.	193.	214.	221.	214.	193.	159.	116.	67.	21.	0.	0.	1762.	178.	259.	128.	175.

MONTH	9	HO	2391.	TOD	63.	TOT	59.	KT	.539	KD	.183											
ORIENTATION	4	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY							
		5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	26.	70.	110.	142.	162.	169.	162.	142.	110.	70.	26.	0.	0.	0.	1192.	143.	206.	100.	131.
SOUTHWEST	0.	0.	0.	11.	22.	32.	53.	96.	133.	160.	171.	166.	139.	82.	0.	0.	0.	1066.	135.	190.	95.	123.
WEST	0.	0.	0.	11.	22.	32.	40.	45.	46.	89.	124.	143.	140.	95.	0.	0.	0.	788.	116.	157.	86.	106.
NORTHWEST	0.	0.	0.	11.	22.	32.	40.	45.	46.	45.	40.	55.	72.	60.	0.	0.	0.	468.	94.	119.	75.	87.
NORTH	0.	0.	0.	11.	22.	32.	40.	45.	46.	45.	40.	32.	22.	11.	0.	0.	0.	346.	86.	104.	71.	80.
NORTHEAST	0.	0.	0.	60.	72.	55.	40.	45.	46.	45.	40.	32.	22.	11.	0.	0.	0.	468.	94.	119.	75.	87.
EAST	0.	0.	95.	140.	143.	124.	89.	46.	45.	40.	32.	22.	11.	0.	0.	0.	788.	116.	157.	86.	106.	
SOUTHEAST	0.	0.	0.	82.	139.	166.	171.	160.	133.	96.	53.	32.	22.	11.	0.	0.	0.	1066.	135.	190.	95.	123.
HORIZ.	0.	0.	1.	32.	77.	119.	152.	173.	180.	173.	152.	119.	77.	32.	1.	0.	0.	1288.	150.	217.	103.	137.

LOCATION ST. CLOUD, MINNESOTA LATITUDE 45 DEGREES 34 MINUTES

MONTH 10 HO 1679. TOD 50. TOT 47. KT .490 KD .187

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS
SOUTH	0.	0.	0.	4.	58.	103.	136.	156.	163.	156.	136.	103.	58.	4.	0.	0.	0.	129.	194.	81.	109.
SOUTHWEST	0.	0.	0.	2.	13.	22.	55.	94.	126.	147.	155.	143.	102.	7.	0.	0.	0.	114.	165.	74.	97.
WEST	0.	0.	0.	2.	13.	22.	30.	35.	36.	73.	100.	112.	93.	7.	0.	0.	0.	89.	120.	63.	77.
NORTHWEST	0.	0.	0.	2.	13.	22.	30.	35.	36.	35.	30.	28.	37.	5.	0.	0.	0.	70.	87.	55.	63.
NORTH	0.	0.	0.	2.	13.	22.	30.	35.	36.	35.	30.	22.	13.	2.	0.	0.	0.	68.	82.	54.	61.
NORTHEAST	0.	0.	0.	2.	13.	22.	30.	35.	36.	35.	30.	22.	13.	2.	0.	0.	0.	70.	87.	55.	63.
EAST	0.	0.	0.	5.	37.	28.	30.	35.	36.	35.	30.	22.	13.	2.	0.	0.	0.	87.	70.	55.	63.
SOUTHEAST	0.	0.	0.	7.	93.	112.	100.	73.	36.	35.	30.	22.	13.	2.	0.	0.	0.	89.	120.	63.	77.
HORIZ.	0.	0.	0.	7.	102.	143.	155.	147.	126.	94.	55.	22.	13.	2.	0.	0.	0.	114.	165.	74.	97.
	0.	0.	0.	4.	38.	75.	105.	124.	131.	124.	105.	75.	38.	4.	0.	0.	0.	110.	160.	73.	95.

MONTH 11 HO 1111. TOD 32. TOT 29. KT .435 KD .185

ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	23.	81.	117.	138.	144.	138.	117.	81.	23.	0.	0.	0.	0.	862.	105.	165.	57.	80.
SOUTHWEST	0.	0.	0.	0.	5.	17.	49.	83.	110.	126.	128.	106.	36.	0.	0.	0.	0.	659.	88.	133.	51.	68.
WEST	0.	0.	0.	0.	5.	13.	20.	25.	26.	56.	76.	76.	31.	0.	0.	0.	0.	327.	60.	82.	40.	48.
NORTHWEST	0.	0.	0.	0.	5.	13.	20.	25.	26.	25.	20.	13.	10.	0.	0.	0.	0.	157.	45.	56.	34.	39.
NORTH	0.	0.	0.	0.	5.	13.	20.	25.	26.	25.	20.	13.	5.	0.	0.	0.	0.	152.	45.	55.	34.	38.
NORTHEAST	0.	0.	0.	0.	10.	13.	20.	25.	26.	25.	20.	13.	5.	0.	0.	0.	0.	157.	45.	56.	34.	39.
EAST	0.	0.	0.	0.	31.	76.	76.	56.	26.	25.	20.	13.	5.	0.	0.	0.	0.	327.	60.	82.	40.	48.
SOUTHEAST	0.	0.	0.	0.	36.	106.	128.	126.	110.	83.	49.	17.	5.	0.	0.	0.	0.	659.	88.	133.	51.	68.
HORIZ.	0.	0.	0.	0.	10.	40.	66.	83.	88.	83.	66.	40.	10.	0.	0.	0.	0.	484.	73.	106.	45.	58.

MONTH 12 HO 905. TOD 18. TOT 15. KT .504 KD .187

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14		15	16	17	18	19	20	SATGS	SATGD	SATGS
SOUTH	0.	0.	0.	0.	5.	90.	142.	171.	180.	171.	142.	90.	5.	0.	0.	0.	0.	109.	183.	48.	74.
SOUTHWEST	0.	0.	0.	0.	2.	18.	58.	100.	135.	155.	154.	116.	7.	0.	0.	0.	0.	86.	141.	39.	59.
WEST	0.	0.	0.	0.	2.	11.	18.	23.	24.	61.	85.	80.	6.	0.	0.	0.	0.	46.	69.	25.	34.
NORTHWEST	0.	0.	0.	0.	2.	11.	18.	23.	24.	23.	18.	11.	3.	0.	0.	0.	0.	30.	40.	20.	23.
NORTH	0.	0.	0.	0.	2.	11.	18.	23.	24.	23.	18.	11.	2.	0.	0.	0.	0.	30.	40.	20.	23.
NORTHEAST	0.	0.	0.	0.	3.	11.	18.	23.	24.	23.	18.	11.	2.	0.	0.	0.	0.	30.	40.	20.	23.
EAST	0.	0.	0.	0.	6.	80.	85.	61.	24.	23.	18.	11.	2.	0.	0.	0.	0.	46.	69.	25.	34.
SOUTHEAST	0.	0.	0.	0.	7.	116.	154.	155.	135.	100.	58.	18.	2.	0.	0.	0.	0.	86.	141.	39.	59.
HORIZ.	0.	0.	0.	0.	3.	33.	63.	83.	90.	83.	63.	33.	3.	0.	0.	0.	0.	60.	93.	30.	42.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	129.	129.	121.	105.	110.	116.	129.	139.	143.	129.	105.	109.	122.
SOUTHWEST	100.	106.	111.	108.	118.	125.	137.	141.	135.	114.	88.	86.	114.
WEST	53.	68.	88.	101.	118.	128.	137.	133.	116.	89.	60.	46.	95.
NORTHWEST	28.	39.	62.	85.	105.	116.	123.	114.	94.	70.	45.	30.	76.
NORTH	28.	35.	52.	73.	92.	104.	108.	100.	86.	68.	45.	30.	68.
NORTHEAST	28.	39.	62.	85.	105.	116.	123.	114.	94.	70.	45.	30.	76.
EAST	53.	68.	88.	101.	118.	128.	137.	133.	116.	89.	60.	46.	95.
SOUTHEAST	100.	106.	111.	108.	118.	125.	137.	141.	135.	114.	88.	86.	114.
HORIZ.	70.	95.	124.	140.	163.	175.	187.	178.	150.	110.	73.	60.	127.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	223.	221.	195.	154.	149.	152.	170.	190.	206.	194.	165.	183.	183.
SOUTHWEST	171.	179.	177.	158.	163.	168.	186.	195.	190.	165.	133.	141.	169.
WEST	85.	110.	136.	146.	163.	173.	186.	181.	157.	120.	82.	69.	134.
NORTHWEST	41.	58.	89.	116.	140.	153.	160.	146.	119.	87.	56.	40.	100.
NORTH	39.	54.	71.	94.	117.	131.	133.	122.	104.	82.	55.	40.	86.
NORTHEAST	41.	58.	89.	116.	140.	153.	160.	146.	119.	87.	56.	40.	100.
EAST	85.	110.	136.	146.	163.	173.	186.	181.	157.	120.	82.	69.	134.
SOUTHEAST	171.	179.	177.	158.	163.	168.	186.	195.	190.	165.	133.	141.	169.
HORIZ.	116.	159.	201.	216.	243.	256.	273.	259.	217.	160.	106.	93.	192.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	54.	63.	72.	77.	87.	95.	104.	106.	100.	81.	57.	48.	79.
SOUTHWEST	43.	53.	67.	78.	92.	101.	110.	108.	95.	74.	51.	39.	76.
WEST	25.	36.	56.	74.	92.	103.	110.	103.	86.	63.	40.	25.	68.
NORTHWEST	16.	23.	43.	65.	84.	96.	101.	92.	75.	55.	34.	20.	59.
NORTH	16.	22.	38.	58.	76.	88.	91.	84.	71.	54.	34.	20.	54.
NORTHEAST	16.	23.	43.	65.	84.	96.	101.	92.	75.	55.	34.	20.	59.
EAST	25.	36.	56.	74.	92.	103.	110.	103.	86.	63.	40.	25.	68.
SOUTHEAST	43.	53.	67.	78.	92.	101.	110.	108.	95.	74.	51.	39.	76.
HORIZ.	32.	48.	74.	96.	120.	134.	141.	128.	103.	73.	45.	30.	85.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	90.	103.	110.	104.	111.	119.	130.	136.	131.	109.	80.	74.	108.
SOUTHWEST	70.	85.	101.	107.	120.	129.	140.	138.	123.	97.	68.	59.	103.
WEST	38.	54.	80.	100.	120.	133.	140.	130.	106.	77.	48.	34.	88.
NORTHWEST	21.	32.	56.	83.	106.	120.	124.	111.	87.	63.	39.	23.	72.
NORTH	20.	28.	47.	70.	91.	105.	107.	96.	80.	61.	38.	23.	64.
NORTHEAST	21.	32.	56.	83.	106.	120.	124.	111.	87.	63.	39.	23.	72.
EAST	38.	54.	80.	100.	120.	133.	140.	130.	106.	77.	48.	34.	88.
SOUTHEAST	70.	85.	101.	107.	120.	129.	140.	138.	123.	97.	68.	59.	103.
HORIZ.	49.	76.	113.	140.	170.	186.	195.	175.	137.	95.	58.	42.	120.

LOCATION	SALT LAKE CITY, UTAH	LATITUDE	40 DEGREES	46 MINUTES
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MONTH	1	HO	1388.	TOD	29.	TOT	26.	KT	.46R	KD	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD						
ORIENTATION																						
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	0.	0.	45.	98.	131.	151.	157.	151.	131.	98.	45.	0.	0.	0.	0.	1007.	110.	176.	59.	85.
SOUTHWEST	0.	0.	0.	0.	8.	20.	56.	91.	121.	140.	145.	129.	73.	0.	0.	0.	0.	781.	92.	143.	52.	72.
WEST	0.	0.	0.	0.	8.	18.	25.	30.	32.	65.	88.	95.	62.	0.	0.	0.	0.	423.	63.	91.	40.	51.
NORTHWEST	0.	0.	0.	0.	8.	18.	25.	30.	32.	30.	25.	18.	20.	0.	0.	0.	0.	206.	46.	59.	33.	39.
NORTH	0.	0.	0.	0.	8.	18.	25.	30.	32.	30.	25.	18.	8.	0.	0.	0.	0.	194.	45.	58.	33.	38.
NORTHEAST	0.	0.	0.	0.	20.	18.	25.	30.	32.	30.	25.	18.	8.	0.	0.	0.	0.	206.	46.	59.	33.	39.
EAST	0.	0.	0.	0.	62.	95.	88.	65.	32.	30.	25.	18.	8.	0.	0.	0.	0.	423.	63.	91.	40.	51.
SOUTHEAST	0.	0.	0.	0.	73.	129.	145.	140.	121.	91.	56.	20.	8.	0.	0.	0.	0.	781.	92.	143.	52.	72.
HORIZ.	0.	0.	0.	0.	20.	57.	86.	106.	112.	106.	86.	57.	20.	0.	0.	0.	0.	650.	82.	124.	47.	64.

MONTH	2	HO	1958.	TOD	36.	TOT	33.	KT	.909	KD	.125	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS						
ORIENTATION												RADIATION		SATGS		SATGS						
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	0.	24.	143.	232.	296.	336.	349.	336.	296.	232.	143.	24.	0.	0.	0.	2410.	208.	349.	111.	174.
SOUTHWEST	0.	0.	0.	3.	16.	28.	91.	181.	260.	319.	350.	341.	273.	65.	0.	0.	0.	1927.	174.	286.	95.	146.
WEST	0.	0.	0.	0.	3.	16.	28.	37.	43.	46.	142.	221.	267.	252.	70.	0.	0.	1125.	117.	182.	69.	99.
NORTHWEST	0.	0.	0.	0.	3.	16.	28.	37.	43.	46.	43.	37.	53.	93.	35.	0.	0.	435.	67.	93.	47.	59.
NORTH	0.	0.	0.	3.	16.	28.	37.	43.	46.	43.	37.	28.	16.	3.	0.	0.	0.	300.	58.	75.	43.	51.
NORTHEAST	0.	0.	0.	35.	93.	53.	37.	43.	46.	43.	37.	28.	16.	3.	0.	0.	0.	435.	67.	93.	47.	59.
EAST	0.	0.	0.	70.	252.	267.	221.	142.	46.	43.	37.	28.	16.	3.	0.	0.	0.	1125.	117.	182.	69.	99.
SOUTHEAST	0.	0.	0.	65.	273.	341.	350.	319.	260.	181.	91.	28.	16.	3.	0.	0.	0.	1927.	174.	286.	95.	146.
HORIZ.	0.	0.	0.	9.	85.	163.	226.	266.	279.	266.	226.	163.	85.	9.	0.	0.	0.	1777.	163.	267.	90.	137.

MONTH	3	HO	2593.	TOD	44.	TOT	41.	HOURLY SOLAR RADIATION										KT	.529	KD	.184	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
								4	5	6	7	8	9	10	11	12	13						14	15	16	17
ORIENTATION																										
	SOUTH	0.	0.	0.	27.	68.	105.	134.	153.	159.	153.	134.	105.	68.	27.	0.	0.	0.	1134.	117.	176.	77.	107.			
	SOUTHWEST	0.	0.	0.	12.	24.	35.	50.	92.	127.	153.	165.	162.	139.	87.	0.	0.	0.	1045.	111.	166.	75.	102.			
	WEST	0.	0.	0.	0.	12.	24.	35.	43.	48.	50.	91.	124.	144.	143.	103.	0.	0.	817.	97.	139.	67.	89.			
	NORTHWEST	0.	0.	0.	0.	12.	24.	35.	43.	48.	50.	48.	43.	62.	77.	65.	0.	0.	508.	77.	103.	57.	71.			
	NORTH	0.	0.	0.	0.	12.	24.	35.	43.	48.	50.	48.	43.	35.	24.	12.	0.	0.	374.	68.	88.	53.	63.			
	NORTHEAST	0.	0.	0.	0.	65.	77.	62.	43.	48.	50.	48.	43.	35.	24.	12.	0.	0.	508.	77.	103.	57.	71.			
	EAST	0.	0.	0.	103.	143.	144.	124.	91.	50.	48.	43.	35.	24.	12.	0.	0.	0.	817.	97.	139.	67.	89.			
	SOUTHEAST	0.	0.	0.	87.	139.	162.	165.	153.	127.	92.	50.	35.	24.	12.	0.	0.	0.	1045.	111.	166.	75.	102.			
	HORIZ.	0.	0.	0.	35.	84.	127.	161.	183.	190.	183.	161.	127.	84.	35.	0.	0.	0.	1370.	132.	204.	85.	121.			



LOCATION SALT LAKE CITY, UTAH LATITUDE 40 DEGREES 46 MINUTES

MONTH	4	H0	3220.	TOD	54.	TOT	50.	KT	.579	KD	.177											
HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGD						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	7.	21.	59.	95.	125.	144.	150.	144.	125.	95.	59.	21.	7.	0.	0.	1052.	114.	164.	84.	111.
SOUTHWEST	0.	0.	7.	20.	32.	42.	51.	84.	123.	152.	168.	168.	150.	111.	43.	0.	0.	1151.	120.	174.	87.	117.
WEST	0.	0.	7.	20.	32.	42.	51.	56.	57.	104.	142.	167.	172.	148.	68.	0.	0.	1066.	115.	165.	84.	112.
NORTHWEST	0.	0.	7.	20.	32.	42.	51.	56.	57.	56.	63.	93.	112.	110.	57.	0.	0.	755.	97.	133.	74.	94.
NORTH	0.	0.	17.	20.	32.	42.	51.	56.	57.	56.	51.	42.	32.	20.	17.	0.	0.	491.	82.	105.	66.	79.
NORTHEAST	0.	0.	57.	110.	112.	93.	63.	56.	57.	56.	51.	42.	32.	20.	7.	0.	0.	755.	97.	133.	74.	94.
EAST	0.	0.	68.	148.	172.	167.	142.	104.	57.	56.	51.	42.	32.	20.	7.	0.	0.	1066.	115.	165.	84.	112.
SOUTHEAST	0.	0.	43.	111.	150.	168.	168.	152.	123.	84.	51.	42.	32.	20.	7.	0.	0.	1151.	120.	174.	87.	117.
HORIZ.	0.	0.	19.	70.	123.	169.	206.	228.	236.	228.	206.	169.	123.	70.	19.	0.	0.	1865.	161.	249.	110.	159.

MONTH	5	H0	3619.	TOD	63.	TOT	59.	KT	.000	KD	.179						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
SOUTHWEST	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
WEST	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
NORTHWEST	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
NORTH	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
NORTHEAST	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
EAST	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
SOUTHEAST	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
HORIZ.	0.	3.	17.	32.	45.	56.	65.	70.	72.	70.	65.	56.	45.	32.	17.	3.	0.

MONTH	6	H0	3763.	TOD	72.	TOT	67.	KT	.000	KD	.179						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	4.	12.	20.	28.	34.	40.	43.	44.	43.	40.	34.	28.	20.	12.	4.	0.
SOUTHWEST	0.	4.	12.	20.	28.	34.	40.	43.	44.	43.	40.	34.	28.	20.	12.	4.	0.
WEST	0.	4.	12.	20.	28.	34.	40.	43.	44.	43.	40.	34.	28.	20.	12.	4.	0.
NORTHWEST	0.	4.	12.	20.	28.	34.	40.	43.	44.	43.	40.	34.	28.	20.	12.	4.	0.
NORTH	0.	4.	12.	20.	28.	34.	40.	43.	44.	43.	40.	34.	28.	20.	12.	4.	0.
NORTHEAST	0.	4.	12.	20.	28.	34.	40.	43.	44.	43.	40.	34.	28.	20.	12.	4.	0.
EAST	0.	4.	12.	20.	28.	34.	40.	43.	44.	43.	40.	34.	28.	20.	12.	4.	0.
SOUTHEAST	0.	4.	12.	20.	28.	34.	40.	43.	44.	43.	40.	34.	28.	20.	12.	4.	0.
HORIZ.	0.	6.	20.	34.	46.	57.	66.	71.	73.	71.	66.	57.	46.	34.	20.	6.	0.

LOCATION SALT LAKE CITY, UTAH LATITUDE 40 DEGREES 46 MINUTES

MONTH	7	HO	3616.	TOD	81.	TOT	77.	KT	.000	KD	.179	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
SOUTHWEST	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
WEST	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
NORTHWEST	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
NORTH	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
NORTHEAST	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
EAST	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
SOUTHEAST	0.	2.	10.	19.	27.	34.	39.	42.	43.	42.	39.	34.	27.	19.	10.	2.	0.
HORIZ.	0.	3.	17.	32.	45.	56.	65.	70.	72.	70.	65.	56.	45.	32.	17.	3.	0.

MONTH	8	HO	3197.	TOD	79.	TOT	74.	KT	.000	KD	.179	HOURLY SOLAR RADIATION					DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
SOUTH	0.	0.	6.	15.	24.	31.	36.	40.	41.	40.	36.	31.	24.	15.	6.	0.	0.	100.	116.	86.	95.
SOUTHWEST	0.	0.	6.	15.	24.	31.	36.	40.	41.	40.	36.	31.	24.	15.	6.	0.	0.	100.	116.	86.	95.
WEST	0.	0.	6.	15.	24.	31.	36.	40.	41.	40.	36.	31.	24.	15.	6.	0.	0.	100.	116.	86.	95.
NORTHWEST	0.	0.	6.	15.	24.	31.	36.	40.	41.	40.	36.	31.	24.	15.	6.	0.	0.	100.	116.	86.	95.
NORTH	0.	0.	6.	15.	24.	31.	36.	40.	41.	40.	36.	31.	24.	15.	6.	0.	0.	100.	116.	86.	95.
NORTHEAST	0.	0.	6.	15.	24.	31.	36.	40.	41.	40.	36.	31.	24.	15.	6.	0.	0.	100.	116.	86.	95.
EAST	0.	0.	6.	15.	24.	31.	36.	40.	41.	40.	36.	31.	24.	15.	6.	0.	0.	100.	116.	86.	95.
SOUTHEAST	0.	0.	6.	15.	24.	31.	36.	40.	41.	40.	36.	31.	24.	15.	6.	0.	0.	100.	116.	86.	95.
HORIZ.	0.	0.	11.	25.	39.	51.	60.	66.	68.	66.	60.	51.	39.	25.	11.	0.	0.	114.	141.	94.	109.

MONTH	9	HO	2581.	TOD	69.	TOT	64.	KT	.621	KD	.169	DAILY TOTAL RADIATION				SAG/DAYTIME SATGS				SAG/ALL DAY SATGS					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20								
SOUTH	0.	0.	0.	30.	80.	126.	162.	184.	192.	184.	162.	126.	80.	30.	0.	0.	0.	1355.	161.	231.	111.	146.			
SOUTHWEST	0.	0.	0.	11.	24.	35.	52.	105.	151.	185.	202.	199.	170.	104.	0.	0.	0.	1238.	153.	217.	107.	139.			
WEST	0.	0.	0.	11.	24.	35.	44.	49.	51.	105.	149.	176.	175.	123.	0.	0.	0.	943.	133.	182.	96.	121.			
NORTHWEST	0.	0.	0.	11.	24.	35.	44.	49.	51.	49.	44.	71.	92.	77.	0.	0.	0.	546.	106.	134.	83.	97.			
NORTH	0.	0.	0.	11.	24.	35.	44.	49.	51.	49.	44.	35.	24.	11.	0.	0.	0.	377.	94.	114.	77.	87.			
NORTHEAST	0.	0.	0.	77.	92.	71.	44.	49.	51.	49.	44.	35.	24.	11.	0.	0.	0.	546.	106.	134.	83.	97.			
EAST	0.	0.	0.	123.	175.	176.	149.	105.	51.	49.	44.	35.	24.	11.	0.	0.	0.	943.	133.	182.	96.	121.			
SOUTHEAST	0.	0.	0.	104.	170.	199.	202.	185.	151.	105.	52.	35.	24.	11.	0.	0.	0.	1238.	153.	217.	107.	139.			
HORIZ.	0.	0.	1.	39.	96.	149.	190.	216.	224.	216.	190.	149.	96.	39.	1.	0.	0.	1602.	174.	261.	119.	161.			

[illegible]

MONTH	11	H0	1376.	TOD	42.	TOT	39.	HOURLY SOLAR RADIATION										KT		KD		.179		DAILY TOTAL RADIATION		SAG/DAYTIME SAG/ALL DAY	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20										
SOUTH	0.	0.	0.	0.	6.	14.	19.	23.	24.	23.	19.	14.	6.	0.	0.	0.	0.	148.	54.	64.	44.	48.					
SOUTHWEST	0.	0.	0.	0.	6.	14.	19.	23.	24.	23.	19.	14.	6.	0.	0.	0.	0.	148.	54.	64.	44.	48.					
WEST	0.	0.	0.	0.	6.	14.	19.	23.	24.	23.	19.	14.	6.	0.	0.	0.	0.	148.	54.	64.	44.	48.					
NORTHWEST	0.	0.	0.	0.	6.	14.	19.	23.	24.	23.	19.	14.	6.	0.	0.	0.	0.	148.	54.	64.	44.	48.					
NORTH	0.	0.	0.	0.	6.	14.	19.	23.	24.	23.	19.	14.	6.	0.	0.	0.	0.	148.	54.	64.	44.	48.					
NORTHEAST	0.	0.	0.	0.	6.	14.	19.	23.	24.	23.	19.	14.	6.	0.	0.	0.	0.	148.	54.	64.	44.	48.					
EAST	0.	0.	0.	0.	6.	14.	19.	23.	24.	23.	19.	14.	6.	0.	0.	0.	0.	148.	54.	64.	44.	48.					
SOUTHEAST	0.	0.	0.	0.	6.	14.	19.	23.	24.	23.	19.	14.	6.	0.	0.	0.	0.	148.	54.	64.	44.	48.					
HORIZ.	0.	0.	0.	0.	11.	23.	32.	38.	40.	38.	32.	23.	11.	0.	0.	0.	0.	246.	62.	79.	47.	54.					

MONTH	12	H0	1171.	TOD	34.	TOT	31.	HOURLY SOLAR RADIATION										KT	KD		.186		DAILY TOTAL RADIATION		SAG/DAYTIME		SAG/ALL DAY	
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20										
	SOUTH	0.	0.	0.	0.	29.	93.	131.	152.	159.	152.	131.	93.	29.	0.	0.	0.	0.	969.	116.	183.	63.	88.					
	SOUTHWEST	0.	0.	0.	0.	5.	20.	56.	92.	121.	139.	142.	120.	44.	0.	0.	0.	0.	739.	97.	148.	55.	75.					
	WEST	0.	0.	0.	0.	5.	14.	22.	27.	29.	61.	83.	85.	36.	0.	0.	0.	0.	361.	65.	90.	43.	53.					
	NORTHWEST	0.	0.	0.	0.	5.	14.	22.	27.	29.	27.	22.	14.	10.	0.	0.	0.	0.	170.	48.	60.	37.	41.					
	NORTH	0.	0.	0.	0.	5.	14.	22.	27.	29.	27.	22.	14.	5.	0.	0.	0.	0.	165.	48.	59.	37.	41.					
	NORTHEAST	0.	0.	0.	0.	10.	14.	22.	27.	29.	27.	22.	14.	5.	0.	0.	0.	0.	170.	48.	60.	37.	41.					
	EAST	0.	0.	0.	0.	36.	85.	83.	61.	29.	27.	22.	14.	5.	0.	0.	0.	0.	361.	65.	90.	43.	53.					
	SOUTHEAST	0.	0.	0.	0.	44.	120.	142.	139.	121.	92.	56.	20.	5.	0.	0.	0.	0.	739.	97.	148.	55.	75.					
	HORIZ.	0.	0.	0.	0.	11.	45.	74.	94.	100.	94.	74.	45.	11.	0.	0.	0.	0.	548.	80.	118.	49.	63.					

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	110.	208.	117.	114.	85.	94.	103.	100.	161.	161.	54.	116.	119.
SOUTHWEST	92.	174.	111.	120.	85.	94.	103.	100.	153.	141.	54.	97.	110.
WEST	63.	117.	97.	115.	85.	94.	103.	100.	133.	109.	54.	65.	95.
NORTHWEST	46.	67.	77.	97.	85.	94.	103.	100.	106.	82.	54.	48.	80.
NORTH	45.	58.	68.	82.	85.	94.	103.	100.	94.	77.	54.	48.	76.
NORTHEAST	46.	67.	77.	97.	85.	94.	103.	100.	106.	82.	54.	48.	80.
EAST	63.	117.	97.	115.	85.	94.	103.	100.	133.	109.	54.	65.	95.
SOUTHEAST	92.	174.	111.	120.	85.	94.	103.	100.	153.	141.	54.	97.	110.
HORIZ.	82.	163.	132.	161.	100.	109.	118.	114.	178.	141.	62.	80.	120.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	176.	349.	176.	164.	102.	111.	120.	116.	231.	246.	64.	183.	170.
SOUTHWEST	143.	286.	166.	174.	102.	111.	120.	116.	217.	210.	64.	148.	155.
WEST	91.	182.	139.	165.	102.	111.	120.	116.	182.	151.	64.	90.	126.
NORTHWEST	59.	93.	103.	133.	102.	111.	120.	116.	134.	103.	64.	60.	100.
NORTH	58.	75.	88.	105.	102.	111.	120.	116.	114.	94.	64.	59.	92.
NORTHEAST	59.	93.	103.	133.	102.	111.	120.	116.	134.	103.	64.	60.	100.
EAST	91.	182.	139.	165.	102.	111.	120.	116.	182.	151.	64.	90.	126.
SOUTHEAST	143.	286.	166.	174.	102.	111.	120.	116.	217.	210.	64.	148.	155.
HORIZ.	124.	267.	204.	249.	128.	137.	146.	141.	261.	210.	79.	118.	172.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	59.	111.	77.	84.	72.	81.	90.	86.	111.	100.	44.	63.	81.
SOUTHWEST	52.	95.	75.	87.	72.	81.	90.	86.	107.	91.	44.	55.	78.
WEST	40.	69.	67.	84.	72.	81.	90.	86.	96.	76.	44.	43.	71.
NORTHWEST	33.	47.	57.	74.	72.	81.	90.	86.	83.	64.	44.	37.	64.
NORTH	33.	43.	53.	66.	72.	81.	90.	86.	77.	62.	44.	37.	62.
NORTHEAST	33.	47.	57.	74.	72.	81.	90.	86.	83.	64.	44.	37.	64.
EAST	40.	69.	67.	84.	72.	81.	90.	86.	96.	76.	44.	43.	71.
SOUTHEAST	52.	95.	75.	87.	72.	81.	90.	86.	107.	91.	44.	55.	78.
HORIZ.	47.	90.	85.	110.	81.	90.	99.	94.	119.	91.	47.	49.	84.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	85.	174.	107.	111.	82.	92.	100.	95.	146.	138.	48.	88.	106.
SOUTHWEST	72.	146.	102.	117.	82.	92.	100.	95.	139.	122.	48.	75.	99.
WEST	51.	99.	89.	112.	82.	92.	100.	95.	121.	95.	48.	53.	86.
NORTHWEST	39.	59.	71.	94.	82.	92.	100.	95.	97.	73.	48.	41.	74.
NORTH	38.	51.	63.	79.	82.	92.	100.	95.	87.	69.	48.	41.	70.
NORTHEAST	39.	59.	71.	94.	82.	92.	100.	95.	97.	73.	48.	41.	74.
EAST	51.	99.	89.	112.	82.	92.	100.	95.	121.	95.	48.	53.	86.
SOUTHEAST	72.	146.	102.	117.	82.	92.	100.	95.	139.	122.	48.	75.	99.
HORIZ.	64.	137.	121.	159.	98.	108.	116.	109.	161.	121.	54.	63.	109.



LOCATION SAN ANTONIO, TEXAS LATITUDE 29 DEGREES 31 MINUTES

MONTH	1	HO	1992.	TOD	54.	TOT	51.	KT	541	KD	.182						
HOURLY SOLAR RADIATION																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	6.	80.	125.	156.	174.	180.	174.	156.	125.	80.	6.	0.	0.	0.
SOUTHWEST	0.	0.	0.	2.	15.	27.	64.	105.	140.	166.	178.	171.	132.	11.	0.	0.	0.
WEST	0.	0.	0.	2.	15.	27.	36.	42.	44.	85.	117.	132.	116.	11.	0.	0.	0.
NORTHWEST	0.	0.	0.	2.	15.	27.	36.	42.	44.	42.	36.	32.	40.	5.	0.	0.	0.
NORTH	0.	0.	0.	2.	15.	27.	36.	42.	44.	42.	36.	27.	15.	2.	0.	0.	0.
NORTHEAST	0.	0.	0.	5.	40.	32.	36.	42.	44.	42.	36.	27.	15.	2.	0.	0.	0.
EAST	0.	0.	0.	11.	116.	132.	117.	85.	44.	42.	36.	27.	15.	2.	0.	0.	0.
SOUTHEAST	0.	0.	0.	11.	132.	171.	178.	166.	140.	105.	64.	27.	15.	2.	0.	0.	0.
HORIZ.	0.	0.	0.	4.	50.	99.	138.	162.	171.	162.	138.	99.	50.	4.	0.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS SATGD																	
SAG/ALL DAY SATGS SATGD																	
91. 124.																	
147. 223.																	
128. 189.																	
100. 138.																	
627. 87.																	
77. 97.																	
322. 69.																	
289. 61.																	
75. 92.																	
77. 97.																	
322. 61.																	
627. 71.																	
100. 138.																	
128. 189.																	
1010. 83.																	
133. 198.																	
85. 113.																	

MONTH	2	HO	2481.	TOD	58.	TOT	55.	KT	.550	KD	.181						
HOURLY SOLAR RADIATION																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	28.	78.	116.	144.	162.	167.	162.	144.	116.	78.	28.	0.	0.	0.
SOUTHWEST	0.	0.	0.	7.	21.	34.	54.	96.	133.	161.	175.	173.	147.	71.	0.	0.	0.
WEST	0.	0.	0.	7.	21.	34.	43.	49.	51.	95.	129.	148.	143.	77.	0.	0.	0.
NORTHWEST	0.	0.	0.	7.	21.	34.	43.	49.	51.	49.	43.	56.	67.	42.	0.	0.	0.
NORTH	0.	0.	0.	7.	21.	34.	43.	49.	51.	49.	43.	34.	21.	7.	0.	0.	0.
NORTHEAST	0.	0.	0.	42.	67.	56.	43.	49.	51.	49.	43.	34.	21.	7.	0.	0.	0.
EAST	0.	0.	0.	77.	143.	148.	129.	95.	51.	49.	43.	34.	21.	7.	0.	0.	0.
SOUTHEAST	0.	0.	0.	71.	147.	173.	175.	161.	133.	96.	54.	34.	21.	7.	0.	0.	0.
HORIZ.	0.	0.	0.	20.	76.	127.	167.	192.	201.	192.	167.	127.	76.	20.	0.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SAG/ALL DAY																	
SATGS SATGD SATGS SATGD																	
1225. 211. 143. 211. 94. 126.																	
1075. 193. 132. 193. 90. 118.																	
799. 158. 113. 158. 81. 102.																	
464. 90. 116. 70. 82.																	
362. 104. 83. 104. 67. 76.																	
464. 90. 116. 70. 82.																	
799. 158. 113. 158. 81. 102.																	
1075. 132. 133. 132. 90. 118.																	
1366. 229. 152. 229. 99. 135.																	

MONTH	3	HO	2971.	TOD	65.	TOT	61.	HOURLY SOLAR RADIATION								KT	.542	KT	.182
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
SOUTH	0.	0.	0.	26.	63.	95.	121.	137.	142.	137.	121.	95.	63.	26.	0.	0.	0.		
SOUTHWEST	0.	0.	0.	13.	28.	40.	49.	81.	117.	144.	159.	160.	141.	94.	0.	0.	0.		
WEST	0.	0.	0.	13.	28.	40.	49.	55.	58.	100.	134.	154.	153.	114.	0.	0.	0.		
NORTHWEST	0.	0.	0.	13.	28.	40.	49.	55.	58.	55.	59.	81.	92.	76.	0.	0.	0.		
NORTH	0.	0.	0.	13.	28.	40.	49.	55.	58.	55.	49.	40.	28.	13.	0.	0.	0.		
NORTHEAST	0.	0.	0.	76.	92.	81.	59.	55.	58.	55.	49.	40.	28.	13.	0.	0.	0.		
EAST	0.	0.	0.	114.	153.	154.	134.	100.	58.	55.	49.	40.	28.	13.	0.	0.	0.		
SOUTHEAST	0.	0.	0.	94.	141.	160.	159.	144.	117.	81.	49.	40.	28.	13.	0.	0.	0.		
HORIZ.	0.	0.	0.	42.	99.	150.	189.	213.	222.	213.	189.	150.	99.	42.	0.	0.	0.		

LOCATION SAN ANTONIO, TEXAS LATITUDE 29 DEGREES 31 MINUTES

MONTH 4 H0 3393. T00 72. TOT 69. KT .500 KD .188

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL												
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	RADIATION	SATGS	SATGD	SAG/ALL DAY	SATGS	SATGD	
-----																								
SOUTH	0.	0.	5.	19.	40.	67.	88.	101.	106.	101.	88.	67.	40.	19.	5.	0.	0.	747.	117.	153.	93.	112.	126.	170.
SOUTHWEST	0.	0.	5.	19.	33.	44.	53.	63.	93.	115.	128.	128.	114.	84.	23.	0.	0.	902.	126.	170.	98.	121.	128.	173.
WEST	0.	0.	5.	19.	33.	44.	53.	59.	61.	96.	124.	140.	141.	116.	35.	0.	0.	928.	128.	173.	99.	123.	116.	152.
NORTHWEST	0.	0.	5.	19.	33.	44.	53.	59.	61.	59.	79.	96.	103.	92.	30.	0.	0.	735.	116.	152.	92.	112.	103.	128.
NORTH	0.	0.	11.	25.	33.	44.	53.	59.	61.	59.	53.	44.	33.	25.	11.	0.	0.	512.	103.	128.	85.	99.	116.	152.
NORTHEAST	0.	0.	30.	92.	103.	96.	79.	59.	61.	59.	53.	44.	33.	19.	5.	0.	0.	735.	116.	152.	92.	112.	128.	173.
EAST	0.	0.	35.	116.	141.	140.	124.	96.	61.	59.	53.	44.	33.	19.	5.	0.	0.	928.	128.	173.	99.	123.	126.	170.
SOUTHEAST	0.	0.	23.	84.	114.	128.	128.	115.	93.	63.	53.	44.	33.	19.	5.	0.	0.	902.	126.	170.	98.	121.	173.	256.
HORIZ.	0.	0.	11.	59.	110.	155.	190.	212.	220.	212.	190.	155.	110.	59.	11.	0.	0.	1697.	202.	296.	146.	199.	142.	185.

MONTH 5 H0 3620. T00 79. TOT 76. KT .563 KD .179

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL												
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	RADIATION	SATGS	SATGD	SAG/ALL DAY	SATGS	SATGD	
-----																								
SOUTH	0.	0.	9.	23.	36.	52.	74.	88.	93.	88.	74.	52.	36.	23.	9.	0.	0.	654.	119.	149.	98.	115.	135.	179.
SOUTHWEST	0.	0.	9.	23.	36.	47.	56.	62.	84.	111.	127.	130.	118.	90.	40.	0.	0.	933.	135.	179.	108.	132.	144.	194.
WEST	0.	0.	9.	23.	36.	47.	56.	62.	63.	105.	139.	160.	163.	142.	74.	0.	0.	1079.	144.	194.	113.	141.	135.	178.
NORTHWEST	0.	0.	9.	23.	36.	47.	56.	62.	63.	74.	102.	124.	134.	124.	70.	0.	0.	923.	135.	178.	108.	132.	118.	147.
NORTH	0.	0.	30.	47.	47.	47.	56.	62.	63.	62.	56.	47.	47.	47.	30.	0.	0.	640.	118.	147.	98.	115.	135.	178.
NORTHEAST	0.	0.	70.	124.	134.	124.	102.	74.	63.	62.	56.	47.	36.	23.	9.	0.	0.	923.	135.	178.	108.	132.	144.	194.
EAST	0.	0.	74.	142.	163.	160.	139.	105.	63.	62.	56.	47.	36.	23.	9.	0.	0.	1079.	144.	194.	113.	141.	135.	179.
SOUTHEAST	0.	0.	40.	90.	118.	130.	127.	111.	84.	62.	56.	47.	36.	23.	9.	0.	0.	933.	135.	179.	108.	132.	202.	296.
HORIZ.	0.	0.	25.	80.	135.	184.	222.	246.	254.	246.	222.	184.	135.	80.	25.	0.	0.	2039.	202.	296.	146.	199.	142.	185.

MONTH 6 H0 3692. T00 85. TOT 82. KT .620 KD .169

ORIENTATION	HOURLY SOLAR RADIATION											DAILY TOTAL												
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	RADIATION	SATGS	SATGD	SAG/ALL DAY	SATGS	SATGD	
-----																								
SOUTH	0.	0.	10.	24.	37.	48.	66.	81.	87.	81.	66.	48.	37.	24.	10.	0.	0.	619.	122.	150.	103.	119.	142.	185.
SOUTHWEST	0.	0.	10.	24.	37.	48.	57.	62.	80.	111.	130.	135.	125.	96.	47.	0.	0.	963.	142.	185.	115.	140.	155.	208.
WEST	0.	0.	10.	24.	37.	48.	57.	62.	64.	112.	151.	177.	183.	162.	94.	0.	0.	1182.	155.	208.	122.	153.	146.	194.
NORTHWEST	0.	0.	10.	24.	37.	48.	57.	62.	64.	84.	117.	143.	156.	147.	92.	0.	0.	1041.	146.	194.	118.	145.	128.	173.
NORTH	0.	0.	42.	60.	59.	53.	57.	62.	64.	62.	57.	53.	59.	60.	42.	0.	0.	730.	128.	161.	107.	126.	146.	194.
NORTHEAST	0.	0.	92.	147.	156.	143.	117.	84.	64.	62.	57.	48.	37.	24.	10.	0.	0.	1041.	146.	194.	118.	145.	155.	208.
EAST	0.	0.	94.	162.	183.	177.	151.	112.	64.	62.	57.	48.	37.	24.	10.	0.	0.	1182.	155.	208.	122.	153.	142.	185.
SOUTHEAST	0.	0.	47.	96.	125.	135.	130.	111.	80.	62.	57.	48.	37.	24.	10.	0.	0.	963.	142.	185.	115.	140.	220.	324.
HORIZ.	0.	0.	32.	92.	153.	206.	247.	273.	282.	273.	247.	206.	153.	92.	32.	0.	0.	2289.	220.	324.	160.	220.	142.	185.



LOCATION	SAN ANTONIO, TEXAS			LATITUDE 29 DEGREES 31 MINUTES																		
MONTH 10	HO 2446.	TOD 75.	TOT 71.	KT .584	KD .176																	
ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY								
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SAT6S	SAT6D	SAT6S	SAT6D	
SOUTH	0.	0.	0.	28.	83.	125.	155.	174.	181.	174.	155.	125.	83.	28.	0.	0.	0.	1309.	165.	239.	113.	148.
SOUTHWEST	0.	0.	0.	7.	21.	33.	56.	102.	143.	173.	189.	186.	157.	69.	0.	0.	0.	1137.	153.	217.	108.	138.
WEST	0.	0.	0.	7.	21.	33.	43.	49.	51.	100.	138.	159.	151.	75.	0.	0.	0.	827.	132.	178.	98.	119.
NORTHWEST	0.	0.	0.	7.	21.	33.	43.	49.	51.	49.	43.	58.	69.	40.	0.	0.	0.	465.	107.	133.	86.	98.
NORTH	0.	0.	0.	7.	21.	33.	43.	49.	51.	49.	43.	33.	21.	7.	0.	0.	0.	359.	99.	120.	83.	92.
NORTHEAST	0.	0.	0.	40.	69.	58.	43.	49.	51.	49.	43.	33.	21.	7.	0.	0.	0.	465.	107.	133.	86.	98.
EAST	0.	0.	0.	75.	151.	159.	138.	100.	51.	49.	43.	33.	21.	7.	0.	0.	0.	827.	132.	178.	98.	119.
SOUTHEAST	0.	0.	0.	69.	157.	186.	189.	173.	143.	102.	56.	33.	21.	7.	0.	0.	0.	1137.	153.	217.	108.	138.
HORIZ.	0.	0.	0.	19.	78.	133.	176.	203.	212.	203.	176.	133.	78.	19.	0.	0.	0.	1430.	173.	254.	117.	155.
MONTH 11	HO 1979.	TOD 63.	TOT 60.	KT .507	KD .187																	
ORIENTATION	HOURLY SOLAR RADIATION														DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SAT6S	SAT6D	SAT6S	SAT6D	
SOUTH	0.	0.	0.	5.	72.	114.	142.	159.	165.	159.	142.	114.	72.	5.	0.	0.	0.	1149.	148.	218.	97.	127.
SOUTHWEST	0.	0.	0.	2.	15.	27.	60.	98.	129.	152.	162.	154.	118.	8.	0.	0.	0.	924.	132.	187.	89.	114.
WEST	0.	0.	0.	2.	15.	27.	36.	41.	43.	80.	107.	119.	103.	8.	0.	0.	0.	582.	106.	141.	78.	94.
NORTHWEST	0.	0.	0.	2.	15.	27.	36.	41.	43.	41.	36.	31.	37.	4.	0.	0.	0.	313.	86.	105.	70.	78.
NORTH	0.	0.	0.	2.	15.	27.	36.	41.	43.	41.	36.	27.	15.	2.	0.	0.	0.	285.	84.	102.	69.	76.
NORTHEAST	0.	0.	0.	4.	37.	31.	36.	41.	43.	41.	36.	27.	15.	2.	0.	0.	0.	313.	86.	105.	70.	78.
EAST	0.	0.	0.	8.	103.	119.	107.	80.	43.	41.	36.	27.	15.	2.	0.	0.	0.	582.	106.	141.	78.	94.
SOUTHEAST	0.	0.	0.	8.	118.	154.	162.	152.	129.	98.	60.	27.	15.	2.	0.	0.	0.	924.	132.	187.	89.	114.
HORIZ.	0.	0.	0.	4.	46.	92.	128.	151.	159.	151.	128.	92.	46.	4.	0.	0.	0.	1002.	137.	198.	92.	118.
MONTH 12	HO 1794.	TOD 56.	TOT 53.	KT .528	KD .184																	
ORIENTATION	HOURLY SOLAR RADIATION														DAILY TOTAL RADIATION	SAG/DAYTIME SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SAT6S	SAT6D	SAT6S	SAT6D	
SOUTH	0.	0.	0.	1.	75.	123.	154.	173.	179.	173.	154.	123.	75.	1.	0.	0.	0.	1230.	150.	227.	93.	125.
SOUTHWEST	0.	0.	0.	1.	12.	26.	66.	105.	138.	162.	172.	162.	118.	1.	0.	0.	0.	963.	130.	190.	84.	109.
WEST	0.	0.	0.	1.	12.	24.	33.	39.	41.	79.	109.	121.	99.	1.	0.	0.	0.	558.	99.	134.	71.	86.
NORTHWEST	0.	0.	0.	1.	12.	24.	33.	39.	41.	39.	33.	24.	30.	1.	0.	0.	0.	276.	78.	95.	62.	69.
NORTH	0.	0.	0.	1.	12.	24.	33.	39.	41.	39.	33.	24.	12.	1.	0.	0.	0.	259.	76.	92.	61.	68.
NORTHEAST	0.	0.	0.	1.	30.	24.	33.	39.	41.	39.	33.	24.	12.	1.	0.	0.	0.	276.	78.	95.	62.	69.
EAST	0.	0.	0.	1.	99.	121.	109.	79.	41.	39.	33.	24.	12.	1.	0.	0.	0.	558.	99.	134.	71.	86.
SOUTHEAST	0.	0.	0.	1.	118.	162.	172.	162.	138.	105.	66.	26.	12.	1.	0.	0.	0.	963.	130.	190.	84.	109.
HORIZ.	0.	0.	0.	1.	39.	86.	123.	147.	155.	147.	123.	86.	39.	1.	0.	0.	0.	946.	129.	187.	83.	108.



## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	147.	143.	131.	117.	119.	110.	128.	144.	159.	165.	148.	150.	138.
SOUTHWEST	128.	132.	131.	126.	135.	112.	149.	158.	160.	153.	132.	130.	137.
WEST	100.	113.	123.	128.	144.	113.	161.	160.	149.	132.	106.	99.	127.
NORTHWEST	77.	90.	104.	116.	135.	112.	149.	142.	126.	107.	86.	78.	110.
NORTH	75.	83.	93.	103.	118.	110.	128.	121.	112.	99.	84.	76.	100.
NORTHEAST	77.	90.	104.	116.	135.	112.	149.	142.	126.	107.	86.	78.	110.
EAST	100.	113.	123.	128.	144.	113.	161.	160.	149.	132.	106.	99.	127.
SOUTHEAST	128.	132.	131.	126.	135.	112.	149.	158.	160.	153.	132.	130.	137.
HORIZ.	133.	152.	168.	173.	202.	133.	228.	224.	204.	173.	137.	129.	171.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	223.	211.	184.	153.	149.	129.	160.	186.	218.	239.	218.	227.	191.
SOUTHWEST	189.	193.	184.	170.	179.	132.	197.	212.	219.	217.	187.	190.	189.
WEST	138.	158.	170.	173.	194.	134.	217.	215.	200.	178.	141.	134.	171.
NORTHWEST	97.	116.	136.	152.	178.	133.	196.	183.	159.	133.	105.	95.	140.
NORTH	92.	104.	115.	128.	147.	130.	158.	147.	135.	120.	102.	92.	122.
NORTHEAST	97.	116.	136.	152.	178.	133.	196.	183.	159.	133.	105.	95.	140.
EAST	138.	158.	170.	173.	194.	134.	217.	215.	200.	178.	141.	134.	171.
SOUTHEAST	189.	193.	184.	170.	179.	132.	197.	212.	219.	217.	187.	190.	189.
HORIZ.	198.	229.	252.	256.	296.	170.	336.	328.	297.	254.	198.	187.	250.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	91.	94.	94.	93.	98.	96.	107.	114.	118.	113.	97.	93.	101.
SOUTHWEST	83.	90.	94.	98.	108.	97.	119.	122.	118.	108.	89.	84.	101.
WEST	71.	81.	90.	99.	113.	98.	126.	123.	113.	98.	78.	71.	97.
NORTHWEST	61.	70.	81.	92.	108.	98.	119.	114.	101.	86.	70.	62.	88.
NORTH	60.	67.	75.	85.	98.	97.	107.	102.	94.	83.	69.	61.	83.
NORTHEAST	61.	70.	81.	92.	108.	98.	119.	114.	101.	86.	70.	62.	88.
EAST	71.	81.	90.	99.	113.	98.	126.	123.	113.	98.	78.	71.	97.
SOUTHEAST	83.	90.	94.	98.	108.	97.	119.	122.	118.	108.	89.	84.	101.
HORIZ.	85.	99.	113.	123.	146.	110.	164.	158.	140.	117.	92.	83.	119.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	124.	126.	121.	112.	115.	107.	125.	137.	147.	148.	127.	125.	126.
SOUTHWEST	109.	118.	121.	121.	132.	109.	146.	151.	148.	138.	114.	109.	126.
WEST	87.	102.	114.	123.	141.	110.	158.	153.	139.	119.	94.	86.	119.
NORTHWEST	69.	82.	97.	112.	132.	110.	146.	136.	118.	98.	78.	69.	104.
NORTH	67.	76.	86.	99.	115.	108.	125.	116.	106.	92.	76.	68.	95.
NORTHEAST	69.	82.	97.	112.	132.	110.	146.	136.	118.	98.	78.	69.	104.
EAST	87.	102.	114.	123.	141.	110.	158.	153.	139.	119.	94.	86.	119.
SOUTHEAST	109.	118.	121.	121.	132.	109.	146.	151.	148.	138.	114.	109.	126.
HORIZ.	113.	135.	155.	168.	199.	131.	226.	214.	187.	155.	118.	108.	159.

LOCATION	SANTA MARIA, CALIFORNIA	LATITUDE	34 DEGREES	53 MINUTES
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MONTH	1	HO	1708.	TOD	54.	TOT	50.	KT	.595	KD	.175	DAILY TOTAL		SAG/DAYTIME		SAG/ALL DAY					
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	82.	142.	181.	205.	213.	205.	181.	142.	82.	0.	0.	0.	0.	164.	253.	96.	134.
SOUTHWEST	0.	0.	0.	0.	12.	23.	71.	120.	162.	192.	204.	192.	136.	0.	0.	0.	0.	139.	209.	86.	115.
WEST	0.	0.	0.	0.	12.	23.	32.	38.	40.	89.	126.	143.	117.	0.	0.	0.	0.	102.	140.	70.	87.
NORTHWEST	0.	0.	0.	0.	12.	23.	32.	38.	40.	38.	32.	36.	0.	0.	0.	0.	0.	75.	92.	59.	66.
NORTH	0.	0.	0.	0.	12.	23.	32.	38.	40.	38.	32.	23.	12.	0.	0.	0.	0.	73.	89.	58.	65.
NORTHEAST	0.	0.	0.	0.	36.	24.	32.	38.	40.	38.	32.	23.	12.	0.	0.	0.	0.	75.	92.	59.	66.
EAST	0.	0.	0.	0.	117.	143.	126.	89.	40.	38.	32.	23.	12.	0.	0.	0.	0.	102.	140.	70.	87.
SOUTHEAST	0.	0.	0.	0.	136.	192.	204.	192.	162.	120.	71.	23.	12.	0.	0.	0.	0.	139.	209.	86.	115.
NORTZ.	0.	0.	0.	0.	40.	91.	133.	159.	168.	159.	133.	91.	40.	0.	0.	0.	0.	132.	195.	83.	110.

MONTH	2	HO	2241.	TOD	55.	TOT	52.	KT	.613	KD	.171											
ORIENTATION																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGE	
SOUTH	0.	0.	0.	25.	90.	138.	173.	195.	203.	195.	173.	138.	90.	25.	0.	0.	0.	1447.	156.	239.	98.	136.
SOUTHWEST	0.	0.	0.	6.	19.	31.	61.	113.	157.	190.	207.	203.	169.	65.	0.	0.	0.	1221.	141.	210.	91.	123.
WEST	0.	0.	0.	6.	19.	31.	40.	46.	48.	101.	143.	167.	159.	70.	0.	0.	0.	829.	113.	161.	78.	100.
NORTHWEST	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	51.	68.	37.	0.	0.	0.	431.	85.	110.	66.	77.
NORTH	0.	0.	0.	6.	19.	31.	40.	46.	48.	46.	40.	31.	19.	6.	0.	0.	0.	329.	78.	97.	62.	71.
NORTHEAST	0.	0.	0.	37.	68.	51.	40.	46.	48.	46.	40.	31.	19.	6.	0.	0.	0.	431.	85.	110.	66.	77.
EAST	0.	0.	0.	70.	159.	167.	143.	101.	48.	46.	40.	31.	19.	6.	0.	0.	0.	829.	113.	161.	78.	100.
SOUTHEAST	0.	0.	0.	65.	169.	203.	207.	190.	157.	113.	61.	31.	19.	6.	0.	0.	0.	1221.	141.	210.	91.	123.
HORIZ.	0.	0.	0.	15.	73.	127.	171.	198.	207.	198.	171.	127.	73.	15.	0.	0.	0.	1374.	151.	230.	96.	132.

MONTH	3	HO	2804.	TOD	58.	TOT	54.	KT	.671	KD	.156													
ORIENTATION																								
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
HOURLY SOLAR RADIATION																								
SOUTH	0.	0.	0.	33.	84.	130.	166.	188.	196.	188.	166.	130.	84.	33.	0.	0.	0.	1397.	147.	220.	99.	135.		
SOUTHWEST	0.	0.	0.	12.	26.	38.	47.	103.	155.	194.	216.	218.	193.	126.	0.	0.	0.	1328.	143.	212.	97.	131.		
WEST	0.	0.	0.	12.	26.	38.	47.	53.	55.	117.	168.	200.	204.	153.	0.	0.	0.	1073.	126.	182.	88.	116.		
NORTHWEST	0.	0.	0.	12.	26.	38.	47.	53.	55.	53.	49.	88.	111.	97.	0.	0.	0.	628.	98.	131.	74.	91.		
NORTH	0.	0.	0.	12.	26.	38.	47.	53.	55.	53.	47.	38.	26.	12.	0.	0.	0.	406.	84.	105.	67.	78.		
NORTHEAST	0.	0.	0.	97.	111.	88.	49.	53.	55.	53.	47.	38.	26.	12.	0.	0.	0.	628.	98.	131.	74.	91.		
EAST	0.	0.	0.	153.	204.	200.	168.	117.	55.	53.	47.	38.	26.	12.	0.	0.	0.	126.	126.	182.	88.	116.		
SOUTHEAST	0.	0.	0.	126.	193.	218.	216.	194.	155.	103.	47.	38.	26.	12.	0.	0.	0.	1328.	143.	212.	97.	131.		
NORTH.	0.	0.	0.	46.	114.	175.	222.	252.	262.	252.	222.	175.	114.	46.	0.	0.	0.	1880.	178.	276.	114.	164.		

ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0	1	12	24	37	58	88	107	114	107	88	58	37	24	12	1	0	769	107	141	86	107
SOUTHWEST	0	1	12	24	37	48	56	61	99	136	160	166	153	120	65	1	0	1139	129	179	99	129
WEST	0	1	12	24	37	48	56	61	63	122	171	204	215	197	129	2	0	1341	140	199	106	141
NORTHWEST	0	1	12	24	37	48	56	61	63	71	114	151	173	172	125	2	0	1110	127	176	98	127
NORTH	0	2	54	62	51	48	56	61	63	61	56	48	51	62	54	2	0	728	105	137	85	104
NORTHEAST	0	2	125	172	173	151	114	71	63	61	56	48	37	24	12	1	0	1110	127	176	98	127
EAST	0	2	129	197	215	204	171	122	63	61	56	48	37	24	12	1	0	1341	140	199	106	141
SOUTHEAST	0	2	65	120	153	166	160	136	99	61	56	48	37	24	12	1	0	1139	129	179	99	129
SOUTH	0	2	44	109	175	232	276	304	314	304	276	232	175	109	44	2	0	2598	212	326	149	217

LOCATION	SANTA MARIA, CALIFORNIA	LATITUDE	34 DEGREES	53 MINUTES
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MONTH	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS		
ORIENTATION	HOURLY SOLAR RADIATION															SAG/DAYTIME SATGS		SAG/ALL DAY SATGS			
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
SOUTH	0.	0.	10.	23.	36.	69.	99.	119.	126.	119.	99.	69.	36.	23.	10.	0.	0.	114.	152.	91.	113.
SOUTHWEST	0.	0.	10.	23.	36.	47.	55.	60.	107.	145.	168.	174.	159.	123.	61.	0.	0.	134.	186.	102.	133.
WEST	0.	0.	10.	23.	36.	47.	55.	60.	62.	122.	171.	204.	215.	192.	115.	0.	0.	142.	201.	107.	141.
NORTHWEST	0.	0.	10.	23.	36.	47.	55.	60.	62.	62.	106.	143.	165.	162.	107.	0.	0.	1038.	173.	98.	125.
NORTH	0.	0.	42.	51.	40.	47.	55.	60.	62.	60.	55.	47.	40.	51.	42.	0.	0.	126.	163.	84.	102.
NORTHEAST	0.	0.	107.	162.	165.	143.	106.	62.	62.	60.	55.	47.	36.	23.	10.	0.	0.	126.	173.	98.	125.
EAST	0.	0.	115.	192.	215.	204.	171.	122.	62.	60.	55.	47.	36.	23.	10.	0.	0.	1312.	201.	107.	141.
SOUTHEAST	0.	0.	61.	123.	159.	174.	168.	145.	107.	60.	55.	47.	36.	23.	10.	0.	0.	134.	186.	102.	133.
POLEZ.	0.	0.	35.	100.	167.	225.	270.	299.	309.	299.	270.	225.	167.	100.	35.	0.	0.	2503.	324.	148.	213.

MONTH	8	HO	3300.	TOD	66.	TOT	62.	KT	.678	KD	.155	DAILY TOTAL RADIATION								SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD							
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20												
SOUTH	0.	0.	5.	19.	55.	128.	149.	157.	149.	128.	95.	55.	19.	5.	0.	0.	0.	1060.	132.	183.	99.	126.							
SOUTHWEST	0.	0.	5.	19.	32.	43.	52.	78.	128.	167.	190.	193.	174.	127.	38.	0.	0.	1248.	144.	203.	105.	138.							
WEST	0.	0.	5.	19.	32.	43.	52.	58.	60.	121.	171.	203.	210.	177.	62.	0.	0.	1213.	141.	200.	104.	136.							
NORTHWEST	0.	0.	5.	19.	32.	43.	52.	58.	60.	58.	82.	120.	142.	134.	52.	0.	0.	858.	119.	160.	80.	114.							
NORTH	0.	0.	15.	23.	32.	43.	52.	58.	60.	58.	52.	43.	32.	23.	15.	0.	0.	508.	97.	122.	80.	93.							
NORTHEAST	0.	0.	52.	134.	142.	120.	82.	58.	60.	58.	52.	43.	32.	19.	5.	0.	0.	858.	119.	160.	92.	114.							
EAST	0.	0.	62.	177.	210.	203.	171.	121.	60.	58.	52.	43.	32.	19.	5.	0.	0.	1213.	141.	200.	104.	136.							
SOUTHEAST	0.	0.	38.	127.	174.	193.	190.	167.	128.	78.	52.	43.	32.	19.	5.	0.	0.	1248.	144.	203.	105.	138.							
POLE.	0.	0.	15.	77.	144.	205.	252.	281.	291.	281.	252.	205.	144.	77.	15.	0.	0.	2238.	205.	313.	139.	198.							

MONTH	9	4	H0	2787.	T00	66.	T0T	62.	KT	.674	KD	.156										
ORIENTATION																						
HOURLY SOLAR RADIATION																						
DAILY TOTAL RADIATION																						
SAG/DAYTIME SAG/ALL DAY																						
SATGS SATGD SATGS SATGD																						
SOUTH	0.	0.	0.	0.	31.	82.	164.	187.	195.	187.	164.	128.	82.	31.	0.	0.	0.	1381.	160.	232.	109.	146.
SOUTHWEST	0.	0.	0.	0.	12.	25.	37.	47.	103.	154.	193.	215.	216.	189.	120.	0.	0.	1313.	155.	224.	107.	141.
WEST	0.	0.	0.	0.	12.	25.	37.	47.	53.	55.	117.	168.	199.	201.	145.	0.	0.	1059.	138.	193.	98.	126.
NORTHWEST	0.	0.	0.	0.	12.	25.	37.	47.	53.	55.	53.	49.	88.	110.	92.	0.	0.	621.	108.	141.	83.	100.
NORTH	0.	0.	0.	0.	12.	25.	37.	47.	53.	55.	53.	47.	37.	25.	12.	0.	0.	403.	93.	114.	76.	86.
NORTHEAST	0.	0.	0.	0.	92.	110.	88.	49.	53.	55.	53.	47.	37.	25.	12.	0.	0.	621.	108.	141.	83.	100.
EAST	0.	0.	0.	0.	145.	201.	199.	168.	117.	55.	53.	47.	37.	25.	12.	0.	0.	1059.	138.	193.	98.	126.
SOUTHEAST	0.	0.	0.	0.	120.	189.	216.	193.	154.	103.	47.	37.	25.	12.	0.	0.	0.	1313.	155.	224.	107.	141.
SOUTH.	0.	0.	0.	0.	45.	113.	174.	222.	253.	263.	222.	174.	113.	45.	0.	0.	0.	1878.	194.	292.	126.	176.



LOCATION SANTA MARIA, CALIFORNIA LATITUDE 34 DEGREES 53 MINUTES

MONTH	10	HO	2206.	TOD	64.	TOT	60.	KT	.676	KD	.155											
HOURLY SOLAR RADIATION																						
-----																						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	-----				
SOUTH	0.	0.	0.	25.	100.	156.	197.	222.	231.	222.	197.	156.	100.	25.	0.	0.	0.	1629.	178.	272.	112.	155.
SOUTHWEST	0.	0.	0.	5.	18.	30.	65.	125.	177.	216.	236.	231.	189.	64.	0.	0.	0.	1355.	159.	237.	103.	139.
WEST	0.	0.	0.	5.	18.	30.	39.	45.	47.	110.	160.	189.	178.	68.	0.	0.	0.	888.	126.	177.	89.	112.
NORTHWEST	0.	0.	0.	5.	18.	30.	39.	45.	47.	45.	39.	53.	73.	36.	0.	0.	0.	888.	94.	119.	74.	85.
NORTH	0.	0.	0.	5.	18.	30.	39.	45.	47.	45.	39.	30.	18.	5.	0.	0.	0.	321.	87.	105.	70.	79.
NORTHEAST	0.	0.	0.	36.	73.	53.	39.	45.	47.	45.	39.	30.	18.	5.	0.	0.	0.	430.	94.	119.	74.	85.
EAST	0.	0.	0.	68.	178.	189.	160.	110.	47.	45.	39.	30.	18.	5.	0.	0.	0.	888.	126.	177.	89.	112.
SOUTHEAST	0.	0.	0.	64.	189.	231.	236.	216.	177.	125.	65.	30.	18.	5.	0.	0.	0.	1355.	159.	237.	103.	139.
HORIZ.	0.	0.	0.	14.	76.	138.	187.	217.	228.	217.	187.	138.	76.	14.	0.	0.	0.	1491.	169.	254.	108.	147.

DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGD	SAG/ALL DAY SATGS	ALL DAY SATGD
1629.	178.	272.	112.	155.
1355.	159.	237.	103.	139.
888.	126.	177.	89.	112.
430.	94.	119.	74.	85.
321.	87.	105.	70.	79.
430.	94.	119.	74.	85.
888.	126.	177.	89.	112.
1355.	159.	237.	103.	139.
1491.	169.	254.	108.	147.

MONTH 11	HO	1695.	TOD	61.	TOT	56.	HOURLY SOLAR RADIATION								KD				
							11	12	13	14	15	16	17	18	19	20			
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
SOUTH	0.	0.	0.	0.	86.	151.	194.	219.	227.	219.	194.	151.	86.	0.	0.	0.	0.		
SOUTHWEST	0.	0.	0.	0.	11.	23.	74.	127.	172.	205.	218.	205.	142.	0.	0.	0.	0.		
WEST	0.	0.	0.	0.	11.	23.	32.	38.	40.	93.	134.	152.	122.	0.	0.	0.	0.		
NORTHWEST	0.	0.	0.	0.	11.	23.	32.	38.	40.	38.	32.	23.	37.	0.	0.	0.	0.		
NORTH	0.	0.	0.	0.	11.	23.	32.	38.	40.	38.	32.	23.	11.	0.	0.	0.	0.		
NORTHEAST	0.	0.	0.	0.	37.	23.	32.	38.	40.	38.	32.	23.	11.	0.	0.	0.	0.		
EAST	0.	0.	0.	0.	122.	152.	134.	93.	40.	38.	32.	23.	11.	0.	0.	0.	0.		
SOUTHEAST	0.	0.	0.	0.	142.	205.	218.	205.	172.	127.	74.	23.	11.	0.	0.	0.	0.		
HORIZ.	0.	0.	0.	0.	40.	95.	139.	167.	176.	167.	139.	95.	40.	0.	0.	0.	0.		

DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGD	SAG/ALL DAY SATGS	ALL DAY SATGD
1527.	178.	273.	105.	145.
1178.	151.	225.	94.	125.
644.	110.	150.	77.	94.
273.	82.	99.	65.	72.
247.	80.	95.	64.	71.
273.	82.	99.	65.	72.
644.	110.	150.	77.	94.
1178.	151.	225.	94.	125.
1057.	142.	208.	90.	118.

MONTH 12	HO	1498.	TOD	56.	TOT	52.	HOURLY SOLAR RADIATION							KT	KD				.167						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY			
																		SATGS	SATG <sup>n</sup>	SATGS	SATG <sup>n</sup>	SATGS	SATG <sup>n</sup>		
SOUTH	0.	0.	0.	0.	78.	154.	200.	226.	235.	226.	200.	154.	78.	0.	0.	0.	0.	180.	281.	102.	143.				
SOUTHWEST	0.	0.	0.	0.	9.	26.	79.	132.	177.	209.	221.	203.	124.	0.	0.	0.	0.	150.	227.	90.	121.				
WEST	0.	0.	0.	0.	9.	20.	29.	34.	36.	89.	129.	144.	102.	0.	0.	0.	0.	103.	142.	71.	87.				
NORTHWEST	0.	0.	0.	0.	9.	20.	29.	34.	36.	34.	29.	20.	26.	0.	0.	0.	0.	75.	90.	60.	66.				
NORTH	0.	0.	0.	0.	9.	20.	29.	34.	36.	34.	29.	20.	9.	0.	0.	0.	0.	74.	88.	59.	65.				
NORTHEAST	0.	0.	0.	0.	26.	20.	29.	34.	36.	34.	29.	20.	9.	0.	0.	0.	0.	75.	90.	60.	66.				
EAST	0.	0.	0.	0.	102.	144.	129.	89.	36.	34.	29.	20.	9.	0.	0.	0.	0.	103.	142.	71.	87.				
SOUTHEAST	0.	0.	0.	0.	124.	203.	221.	209.	177.	132.	79.	26.	9.	0.	0.	0.	0.	150.	227.	90.	121.				
HORIZ.	0.	0.	0.	0.	29.	82.	125.	153.	163.	153.	125.	82.	29.	0.	0.	0.	0.	131.	192.	83.	107.				

DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGD	SAG/ALL DAY SATGS	ALL DAY SATGD
1551.	180.	281.	102.	143.
1178.	150.	227.	90.	121.
593.	103.	142.	71.	87.
236.	75.	90.	60.	66.
219.	74.	88.	59.	65.
236.	75.	90.	60.	66.
593.	103.	142.	71.	87.
1178.	150.	227.	90.	121.
941.	131.	192.	83.	107.

LOCATION SANTA MARIA, CALIFORNIA LATITUDE 34 DEGREES 53 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	164.	156.	147.	119.	110.	107.	114.	132.	160.	178.	178.	180.	145.
SOUTHWEST	139.	141.	143.	129.	128.	129.	134.	144.	155.	159.	151.	150.	142.
WEST	102.	113.	126.	128.	136.	140.	142.	141.	138.	126.	110.	103.	126.
NORTHWEST	75.	85.	98.	109.	121.	127.	126.	119.	108.	94.	82.	75.	102.
NORTH	73.	78.	84.	90.	99.	105.	103.	97.	93.	87.	80.	74.	89.
NORTHEAST	75.	85.	98.	109.	121.	127.	126.	119.	108.	94.	82.	75.	102.
EAST	102.	113.	126.	128.	136.	140.	142.	141.	138.	126.	110.	103.	126.
SOUTHEAST	139.	141.	143.	129.	128.	129.	134.	144.	155.	159.	151.	150.	142.
HORIZ.	132.	151.	178.	184.	202.	212.	212.	205.	194.	169.	142.	131.	176.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	253.	239.	220.	168.	147.	141.	152.	183.	232.	272.	273.	281.	213.
SOUTHWEST	209.	210.	212.	187.	179.	179.	186.	203.	224.	237.	225.	227.	206.
WEST	140.	161.	182.	184.	193.	199.	201.	200.	193.	177.	150.	142.	177.
NORTHWEST	92.	110.	131.	149.	166.	176.	173.	160.	141.	119.	99.	90.	134.
NORTH	89.	97.	105.	114.	128.	137.	133.	122.	114.	105.	95.	88.	111.
NORTHEAST	92.	110.	131.	149.	166.	176.	173.	160.	141.	119.	99.	90.	134.
EAST	140.	161.	182.	184.	193.	199.	201.	200.	193.	177.	150.	142.	177.
SOUTHEAST	209.	210.	212.	187.	179.	179.	186.	203.	224.	237.	225.	227.	206.
HORIZ.	195.	230.	276.	285.	310.	326.	324.	313.	292.	254.	208.	192.	267.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	96.	98.	99.	88.	86.	86.	91.	99.	109.	112.	105.	102.	98.
SOUTHWEST	86.	91.	97.	94.	97.	99.	102.	105.	107.	103.	94.	90.	97.
WEST	70.	78.	88.	93.	101.	106.	107.	104.	98.	89.	77.	71.	90.
NORTHWEST	59.	66.	74.	83.	92.	98.	98.	92.	83.	74.	65.	60.	79.
NORTH	58.	62.	67.	72.	80.	85.	84.	80.	76.	70.	64.	59.	72.
NORTHEAST	59.	66.	74.	83.	92.	98.	98.	92.	83.	74.	65.	60.	79.
EAST	70.	78.	88.	93.	101.	106.	107.	104.	98.	89.	77.	71.	90.
SOUTHEAST	86.	91.	97.	94.	97.	99.	102.	105.	107.	103.	94.	90.	97.
HORIZ.	83.	96.	114.	124.	140.	149.	148.	139.	126.	108.	90.	83.	117.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	134.	136.	135.	115.	108.	107.	113.	120.	146.	155.	145.	143.	130.
SOUTHWEST	115.	123.	131.	125.	126.	129.	133.	138.	141.	139.	125.	121.	129.
WEST	87.	100.	116.	124.	134.	141.	141.	136.	126.	112.	94.	87.	117.
NORTHWEST	66.	77.	91.	105.	119.	127.	125.	114.	100.	85.	72.	66.	96.
NORTH	65.	71.	78.	86.	97.	104.	102.	93.	86.	79.	71.	65.	83.
NORTHEAST	66.	77.	91.	105.	119.	127.	125.	114.	100.	85.	72.	66.	96.
EAST	87.	100.	116.	124.	134.	141.	141.	136.	126.	112.	94.	87.	117.
SOUTHEAST	115.	123.	131.	125.	126.	129.	133.	138.	141.	139.	125.	121.	129.
HORIZ.	110.	132.	164.	179.	203.	217.	213.	198.	176.	147.	118.	107.	164.



LOCATION	SAULT STE. MARIE, MICH.	LATITUDE	46 DEGREES	28 MINUTES
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MONTH	4	H0	3089.	7	8	9	10	11	12	13	14	15	16	17	18	19	20		.184			
ORIENTATION																						
HOURLY SOLAR RADIATION																						
SOUTH	0.	0.	8.	24.	60.	95.	123.	140.	146.	140.	123.	95.	60.	24.	8.	0.	0.	1048.	98.	146.	70.	98.
SOUTHWEST	0.	0.	8.	19.	30.	40.	47.	85.	119.	144.	156.	154.	136.	101.	45.	0.	0.	1085.	100.	150.	72.	100.
WEST	0.	0.	8.	19.	30.	40.	47.	52.	53.	93.	125.	146.	150.	130.	68.	0.	0.	963.	94.	138.	68.	93.
NORTHWEST	0.	0.	8.	19.	30.	40.	47.	52.	53.	52.	49.	76.	94.	94.	57.	0.	0.	672.	77.	108.	58.	76.
NORTH	0.	0.	17.	19.	30.	40.	47.	52.	53.	52.	47.	40.	30.	19.	17.	0.	0.	464.	66.	87.	52.	64.
NORTHEAST	0.	0.	57.	94.	94.	76.	49.	52.	53.	52.	47.	40.	30.	19.	8.	0.	0.	672.	77.	108.	58.	76.
EAST	0.	0.	68.	130.	150.	146.	125.	93.	53.	52.	47.	40.	30.	19.	8.	0.	0.	963.	94.	138.	68.	93.
SOUTHEAST	0.	0.	45.	101.	136.	154.	156.	144.	119.	85.	47.	40.	30.	19.	8.	0.	0.	1085.	100.	150.	72.	100.
HORIZ.	0.	0.	21.	64.	108.	147.	176.	195.	202.	195.	176.	147.	108.	64.	21.	0.	0.	1625.	131.	205.	89.	131.

MONTH	5	H0	3579.	T00	8	9	52.	TOT	49.	HOURLY SOLAR RADIATION										KD	.180	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
										11	12	13	14	15	16	17	18	19	20				SATGS	SATGD	SATGS	SATGD
ORIENTATION	4	5	6	7	8	9	52.	114.	132.	138.	132.	114.	86.	52.	25.	14.	4.	0.	992.	106.	148.	83.	109.			
	0.	4.	14.	25.	52.	86.	114.	132.	138.	132.	114.	86.	52.	25.	14.	4.	0.	992.	106.	148.	83.	109.				
	0.	4.	14.	25.	36.	45.	52.	79.	114.	140.	154.	154.	139.	109.	65.	12.	0.	1143.	114.	162.	88.	118.				
	0.	4.	14.	25.	36.	45.	52.	56.	58.	100.	135.	158.	166.	153.	111.	24.	0.	1135.	114.	162.	88.	118.				
	0.	4.	14.	25.	36.	45.	52.	56.	58.	56.	67.	96.	116.	122.	100.	24.	0.	870.	100.	136.	79.	101.				
	0.	13.	39.	34.	36.	45.	52.	56.	58.	56.	52.	45.	36.	34.	39.	13.	0.	607.	85.	111.	70.	86.				
	0.	24.	100.	122.	116.	96.	67.	56.	58.	56.	52.	45.	36.	25.	14.	4.	0.	870.	100.	136.	79.	101.				
	0.	24.	111.	153.	166.	158.	135.	100.	58.	56.	52.	45.	36.	25.	14.	4.	0.	1135.	114.	162.	88.	118.				
	0.	12.	65.	109.	139.	154.	140.	114.	79.	52.	45.	36.	25.	14.	4.	0.	1143.	114.	162.	88.	118.					
	0.	8.	45.	91.	136.	175.	206.	225.	231.	225.	206.	175.	136.	91.	45.	8.	0.	2004.	161.	245.	117.	170.				

MONTH	6	H0	3763.	T00	62.	T0T	58.	KT	.549	KD	.181						
ORIENTATION																	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
SOUTH	0.	6.	16.	27.	47.	79.	105.	121.	127.	121.	105.	79.	47.	27.	16.	6.	0.
SOUTHWEST	0.	6.	16.	27.	37.	46.	53.	73.	107.	132.	145.	145.	131.	104.	65.	19.	0.
WEST	0.	6.	16.	27.	37.	46.	53.	57.	59.	99.	131.	153.	161.	150.	115.	44.	0.
NORTHWEST	0.	6.	16.	27.	37.	46.	53.	57.	59.	57.	72.	99.	118.	124.	107.	46.	0.
NORTH	0.	25.	46.	41.	37.	46.	53.	57.	59.	57.	53.	46.	37.	41.	46.	25.	0.
NORTHEAST	0.	40.	107.	124.	118.	99.	72.	57.	59.	57.	53.	46.	37.	27.	16.	6.	0.
EAST	0.	44.	115.	150.	161.	153.	131.	99.	59.	57.	53.	46.	37.	27.	16.	6.	0.
SOUTHEAST	0.	19.	65.	104.	131.	145.	145.	132.	107.	73.	53.	46.	37.	27.	16.	6.	0.
HORIZ.	0.	15.	53.	98.	141.	178.	207.	225.	232.	225.	207.	178.	141.	98.	53.	15.	0.
DAILY TOTAL RADIATION												SAG/DAYTIME SATGS		SAG/ALL DAY SATGS			
929.												110.	148.	90.	114.		
1108.												120.	164.	96.	125.		
1155.												122.	169.	98.	128.		
926.												110.	148.	90.	114.		
672.												97.	124.	81.	99.		
926.												110.	148.	90.	114.		
1155.												122.	169.	98.	128.		
1108.												120.	164.	96.	125.		
2066.												170.	253.	129.	183.		



LOCATION SAULT STE. MARIE, MICH. LATITUDE 46 DEGREES 28 MINUTES

MONTH	7	HO	3579.	TOD	67.	TOT	64.	KT	.590	KD	.175						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	4.	14.	25.	53.	90.	119.	138.	145.	138.	119.	90.	53.	25.	14.	4.	0.
SOUTHWEST	0.	4.	14.	25.	36.	45.	52.	81.	119.	148.	163.	164.	148.	115.	68.	12.	0.
WEST	0.	4.	14.	25.	36.	45.	52.	57.	58.	104.	142.	168.	177.	163.	117.	24.	0.
NORTHWEST	0.	4.	14.	25.	36.	45.	52.	57.	58.	57.	69.	101.	123.	129.	105.	25.	0.
NORTH	0.	13.	41.	35.	36.	45.	52.	57.	58.	57.	52.	45.	36.	35.	41.	13.	0.
NORTHEAST	0.	25.	105.	129.	123.	101.	69.	57.	58.	57.	52.	45.	36.	25.	14.	4.	0.
EAST	0.	24.	117.	163.	177.	168.	142.	104.	58.	57.	52.	45.	36.	25.	14.	4.	0.
SOUTHEAST	0.	12.	68.	115.	148.	164.	163.	148.	119.	81.	52.	45.	36.	25.	14.	4.	0.
HORIZ.	0.	8.	47.	95.	143.	185.	217.	238.	245.	238.	217.	185.	143.	95.	47.	8.	0.

MONTH	8	HO	3068.	TOD	66.	TOT	63.	KT	.554	KD	.180						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	8.	24.	62.	99.	129.	148.	155.	148.	129.	99.	62.	24.	8.	0.	0.
SOUTHWEST	0.	0.	8.	19.	30.	40.	47.	88.	125.	152.	166.	163.	144.	105.	44.	0.	0.
WEST	0.	0.	8.	19.	30.	40.	47.	52.	53.	97.	132.	155.	159.	136.	67.	0.	0.
NORTHWEST	0.	0.	8.	19.	30.	40.	47.	52.	53.	52.	50.	79.	99.	98.	56.	0.	0.
NORTH	0.	0.	17.	19.	30.	40.	47.	52.	53.	52.	47.	40.	30.	19.	17.	0.	0.
NORTHEAST	0.	0.	56.	98.	99.	79.	50.	52.	53.	52.	47.	40.	30.	19.	8.	0.	0.
EAST	0.	0.	67.	136.	159.	155.	132.	97.	53.	52.	47.	40.	30.	19.	8.	0.	0.
SOUTHEAST	0.	0.	44.	105.	144.	163.	166.	152.	125.	88.	47.	40.	30.	19.	8.	0.	0.
HORIZ.	0.	0.	21.	66.	112.	153.	185.	206.	213.	206.	185.	153.	112.	66.	21.	0.	0.
														</			

MONTH	9	HO	2355.	TOD	58.	TOT	55.	KT	.481	KD	.187						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	23.	61.	96.	124.	142.	148.	142.	124.	96.	61.	23.	0.	0.	0.
SOUTHWEST	0.	0.	0.	11.	21.	31.	50.	87.	117.	139.	148.	142.	118.	69.	0.	0.	0.
WEST	0.	0.	0.	11.	21.	31.	38.	43.	44.	80.	107.	122.	118.	80.	0.	0.	0.
NORTHWEST	0.	0.	0.	11.	21.	31.	38.	43.	44.	43.	38.	49.	62.	50.	0.	0.	0.
NORTH	0.	0.	0.	11.	21.	31.	38.	43.	44.	43.	38.	31.	21.	11.	0.	0.	0.
NORTHEAST	0.	0.	0.	50.	62.	49.	38.	43.	44.	43.	38.	31.	21.	11.	0.	0.	0.
EAST	0.	0.	0.	80.	118.	122.	107.	80.	44.	43.	38.	31.	21.	11.	0.	0.	0.
SOUTHEAST	0.	0.	0.	69.	118.	142.	148.	139.	117.	87.	50.	31.	21.	11.	0.	0.	0.
HORIZ.	0.	0.	1.	29.	68.	105.	133.	151.	157.	151.	133.	105.	68.	29.	1.	0.	0.
																</	

LOCATION SAULT STE. MARIE, MICH. LATITUDE 46 DEGREES 28 MINUTES

MONTH 10	HO 1633.	TOD 47.	TOT 44.	KT .457	KD .186													DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	0.	0.	0.	3.	52.	94.	124.	143.	149.	143.	124.	94.	52.	3.	0.	0.	0.	982.	119.	178.
SOUTHWEST	0.	0.	0.	2.	12.	21.	51.	86.	116.	135.	141.	129.	91.	5.	0.	0.	0.	788.	105.	152.
WEST	0.	0.	0.	2.	12.	21.	28.	33.	34.	34.	67.	91.	101.	83.	5.	0.	0.	478.	82.	111.
NORTHWEST	0.	0.	0.	2.	12.	21.	28.	33.	34.	33.	28.	26.	33.	3.	0.	0.	0.	256.	66.	81.
NORTH	0.	0.	0.	2.	12.	21.	28.	33.	34.	33.	28.	21.	12.	2.	0.	0.	0.	226.	63.	77.
NORTHEAST	0.	0.	0.	3.	33.	26.	28.	33.	34.	33.	28.	21.	12.	2.	0.	0.	0.	254.	66.	81.
EAST	0.	0.	0.	5.	83.	101.	91.	67.	34.	33.	28.	21.	12.	2.	0.	0.	0.	478.	82.	111.
SOUTHEAST	0.	0.	0.	5.	91.	129.	141.	135.	116.	86.	51.	21.	12.	2.	0.	0.	0.	788.	105.	152.
HORIZ.	0.	0.	0.	3.	34.	68.	95.	113.	119.	113.	95.	68.	34.	3.	0.	0.	0.	746.	102.	147.

MONTH 11	HO 1063.	TOD 33.	TOT 31.	KT .323	KD .180													DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	0.	0.	0.	0.	13.	50.	73.	86.	91.	86.	73.	50.	13.	0.	0.	0.	0.	534.	79.	116.
SOUTHWEST	0.	0.	0.	0.	4.	13.	34.	55.	71.	80.	79.	63.	19.	0.	0.	0.	0.	418.	69.	98.
WEST	0.	0.	0.	0.	4.	11.	17.	21.	23.	39.	49.	47.	16.	0.	0.	0.	0.	228.	53.	69.
NORTHWEST	0.	0.	0.	0.	4.	11.	17.	21.	23.	21.	17.	11.	6.	0.	0.	0.	0.	133.	45.	39.
NORTH	0.	0.	0.	0.	4.	11.	17.	21.	23.	21.	17.	11.	4.	0.	0.	0.	0.	131.	45.	54.
NORTHEAST	0.	0.	0.	0.	6.	11.	17.	21.	23.	21.	17.	11.	4.	0.	0.	0.	0.	133.	45.	54.
EAST	0.	0.	0.	0.	16.	47.	49.	39.	23.	21.	17.	11.	4.	0.	0.	0.	0.	228.	53.	69.
SOUTHEAST	0.	0.	0.	0.	19.	63.	79.	80.	71.	55.	34.	13.	4.	0.	0.	0.	0.	418.	69.	98.
HORIZ.	0.	0.	0.	0.	7.	28.	47.	58.	62.	58.	47.	28.	7.	0.	0.	0.	0.	344.	63.	87.

MONTH 12	HO 857.	TOD 22.	TOT 20.	KT .408	KD .183													DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
SOUTH	0.	0.	0.	0.	2.	64.	104.	126.	133.	126.	104.	64.	2.	0.	0.	0.	0.	724.	84.	143.
SOUTHWEST	0.	0.	0.	0.	1.	14.	44.	75.	100.	114.	112.	81.	2.	0.	0.	0.	0.	546.	72.	113.
WEST	0.	0.	0.	0.	1.	9.	16.	20.	21.	47.	63.	57.	2.	0.	0.	0.	0.	237.	44.	61.
NORTHWEST	0.	0.	0.	0.	1.	9.	16.	20.	21.	20.	16.	9.	2.	0.	0.	0.	0.	114.	32.	41.
NORTH	0.	0.	0.	0.	1.	9.	16.	20.	21.	20.	16.	9.	1.	0.	0.	0.	0.	113.	32.	41.
NORTHEAST	0.	0.	0.	0.	2.	9.	16.	20.	21.	20.	16.	9.	1.	0.	0.	0.	0.	114.	32.	41.
EAST	0.	0.	0.	0.	2.	57.	63.	47.	21.	20.	16.	9.	1.	0.	0.	0.	0.	237.	44.	61.
SOUTHEAST	0.	0.	0.	0.	2.	81.	112.	114.	100.	75.	44.	14.	1.	0.	0.	0.	0.	546.	72.	113.
HORIZ.	0.	0.	0.	0.	2.	25.	49.	64.	70.	64.	49.	25.	2.	0.	0.	0.	0.	349.	54.	80.

LOCATION SAULT STE. MARIE, MICH. LATITUDE 46 DEGREES 28 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	103.	112.	116.	98.	106.	110.	123.	132.	129.	119.	79.	88.	110.
SOUTHWEST	82.	93.	105.	100.	114.	120.	132.	134.	121.	105.	69.	72.	104.
WEST	47.	61.	83.	94.	114.	122.	132.	126.	105.	82.	53.	44.	89.
NORTHWEST	30.	37.	57.	77.	100.	110.	116.	107.	87.	66.	45.	32.	72.
NORTH	29.	34.	48.	66.	85.	97.	101.	94.	80.	63.	45.	32.	65.
NORTHEAST	30.	37.	57.	77.	100.	110.	116.	107.	87.	66.	45.	32.	72.
EAST	47.	61.	83.	94.	114.	122.	132.	126.	105.	82.	53.	44.	89.
SOUTHEAST	82.	93.	105.	100.	114.	120.	132.	134.	121.	105.	69.	72.	104.
HORIZ.	61.	85.	117.	131.	161.	170.	182.	168.	135.	102.	63.	54.	119.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	173.	191.	189.	146.	148.	148.	167.	182.	183.	178.	116.	143.	164.
SOUTHWEST	135.	155.	170.	150.	162.	164.	182.	186.	170.	152.	98.	113.	153.
WEST	73.	97.	130.	138.	162.	169.	181.	171.	141.	111.	69.	61.	125.
NORTHWEST	41.	54.	83.	108.	136.	148.	154.	138.	110.	81.	54.	41.	96.
NORTH	40.	49.	66.	87.	111.	124.	127.	115.	98.	77.	54.	41.	82.
NORTHEAST	41.	54.	83.	108.	136.	148.	154.	138.	110.	81.	54.	41.	96.
EAST	73.	97.	130.	138.	162.	169.	181.	171.	141.	111.	69.	61.	125.
SOUTHEAST	135.	155.	170.	150.	162.	164.	182.	186.	170.	152.	98.	113.	153.
HORIZ.	98.	140.	192.	205.	245.	253.	270.	245.	194.	147.	87.	80.	180.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	46.	56.	68.	70.	83.	90.	99.	100.	91.	76.	49.	43.	73.
SOUTHWEST	38.	47.	63.	72.	88.	96.	105.	102.	87.	70.	45.	37.	71.
WEST	25.	33.	52.	68.	88.	98.	104.	97.	79.	60.	39.	28.	64.
NORTHWEST	19.	23.	39.	58.	79.	90.	95.	86.	70.	53.	36.	24.	56.
NORTH	19.	21.	34.	52.	70.	81.	85.	79.	67.	52.	36.	24.	51.
NORTHEAST	19.	23.	39.	58.	79.	90.	95.	86.	70.	53.	36.	24.	56.
EAST	25.	33.	52.	68.	88.	98.	104.	97.	79.	60.	39.	28.	64.
SOUTHEAST	38.	47.	63.	72.	88.	96.	105.	102.	87.	70.	45.	37.	71.
HORIZ.	31.	43.	69.	89.	117.	129.	136.	121.	94.	68.	43.	31.	81.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	73.	90.	105.	98.	109.	114.	126.	129.	118.	102.	63.	62.	99.
SOUTHWEST	59.	74.	96.	100.	118.	125.	136.	131.	112.	90.	56.	52.	96.
WEST	35.	49.	75.	93.	118.	128.	136.	123.	97.	72.	45.	34.	84.
NORTHWEST	23.	30.	52.	76.	101.	114.	118.	104.	81.	59.	39.	27.	69.
NORTH	23.	28.	43.	64.	86.	99.	101.	91.	75.	58.	39.	27.	61.
NORTHEAST	23.	30.	52.	76.	101.	114.	118.	104.	81.	59.	39.	27.	69.
EAST	35.	49.	75.	93.	118.	128.	136.	123.	97.	72.	45.	34.	84.
SOUTHEAST	59.	74.	96.	100.	118.	125.	136.	131.	112.	90.	56.	52.	96.
HORIZ.	44.	68.	106.	131.	170.	183.	191.	166.	124.	88.	52.	40.	114.

LOCATION SAYVILLE, NEW YORK LATITUDE 40 DEGREES 30 MINUTES

MONTH	1	HO	1402.	TOD	35.	TOT	33.	KT	.453	KD	.186	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGD						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD	
SOUTH	0.	0.	0.	0.	44.	94.	125.	144.	150.	144.	125.	94.	44.	0.	0.	0.	0.	965.	112.	175.	64.	89.
SOUTHWEST	0.	0.	0.	0.	8.	20.	54.	88.	116.	134.	138.	123.	71.	0.	0.	0.	0.	751.	95.	144.	57.	77.
WEST	0.	0.	0.	0.	8.	18.	25.	30.	32.	63.	85.	91.	60.	0.	0.	0.	0.	412.	68.	95.	46.	57.
NORTHWEST	0.	0.	0.	0.	8.	18.	25.	30.	32.	30.	25.	18.	19.	0.	0.	0.	0.	205.	51.	65.	39.	45.
NORTH	0.	0.	0.	0.	8.	18.	25.	30.	32.	30.	25.	18.	8.	0.	0.	0.	0.	194.	51.	63.	39.	44.
NORTHEAST	0.	0.	0.	0.	19.	18.	25.	30.	32.	30.	25.	18.	8.	0.	0.	0.	0.	205.	51.	65.	39.	45.
EAST	0.	0.	0.	0.	60.	91.	85.	63.	32.	30.	25.	18.	8.	0.	0.	0.	0.	412.	68.	95.	46.	57.
SOUTHEAST	0.	0.	0.	0.	71.	123.	138.	134.	116.	88.	54.	20.	8.	0.	0.	0.	0.	751.	95.	144.	57.	77.
HORIZ.	0.	0.	0.	0.	20.	56.	84.	103.	109.	103.	84.	56.	20.	0.	0.	0.	0.	636.	86.	128.	53.	70.

MONTH	2	HO	1971.	TOD	35.	TOT	33.	KT	.511	KD	.186											
ORIENTATION												HOURLY SOLAR RADIATION										
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
-----																						
SOUTH	0.	0.	0.	13.	69.	111.	142.	161.	167.	161.	142.	111.	69.	13.	0.	0.	0.	1156.	117.	185.	70.	100.
SOUTHWEST	0.	0.	0.	4.	16.	27.	57.	97.	130.	154.	164.	156.	123.	31.	0.	0.	0.	958.	103.	159.	63.	88.
WEST	0.	0.	0.	4.	16.	27.	35.	40.	42.	81.	111.	126.	114.	33.	0.	0.	0.	627.	80.	116.	53.	69.
NORTHWEST	0.	0.	0.	4.	16.	27.	35.	40.	42.	40.	35.	37.	48.	18.	0.	0.	0.	342.	59.	79.	44.	53.
NORTH	0.	0.	0.	4.	16.	27.	35.	40.	42.	40.	35.	27.	16.	4.	0.	0.	0.	285.	55.	72.	42.	49.
NORTHEAST	0.	0.	0.	18.	48.	37.	35.	40.	42.	40.	35.	27.	16.	4.	0.	0.	0.	342.	59.	79.	44.	53.
EAST	0.	0.	0.	33.	114.	126.	111.	81.	42.	40.	35.	27.	16.	4.	0.	0.	0.	627.	80.	116.	53.	69.
SOUTHEAST	0.	0.	0.	31.	123.	156.	164.	154.	130.	97.	57.	27.	16.	4.	0.	0.	0.	958.	103.	159.	63.	88.
HORIZ.	0.	0.	0.	9.	51.	93.	126.	147.	154.	147.	126.	93.	51.	9.	0.	0.	0.	1007.	107.	165.	65.	91.

MONTH	3	HO	2603.	TOD	43.	TOT	41.	KT	.510	KD	.187												
ORIENTATION																							
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	26.	65.	100.	128.	145.	151.	145.	128.	100.	65.	26.	0.	0.	0.	1082.	112.	169.	75.	104.	
SOUTHWEST	0.	0.	0.	12.	24.	35.	49.	88.	122.	146.	157.	153.	132.	82.	0.	0.	0.	1001.	107.	159.	73.	99.	
WEST	0.	0.	0.	12.	24.	35.	43.	48.	50.	89.	119.	137.	135.	97.	0.	0.	0.	790.	94.	135.	66.	87.	
NORTHWEST	0.	0.	0.	12.	24.	35.	43.	48.	50.	88.	119.	137.	135.	97.	0.	0.	0.	500.	75.	101.	57.	70.	
NORTH	0.	0.	0.	12.	24.	35.	43.	48.	50.	88.	119.	137.	135.	97.	0.	0.	0.	374.	67.	87.	53.	63.	
NORTHEAST	0.	0.	0.	62.	74.	61.	43.	48.	50.	88.	119.	137.	135.	97.	0.	0.	0.	500.	75.	101.	57.	70.	
EAST	0.	0.	0.	97.	135.	137.	119.	89.	50.	48.	43.	35.	24.	12.	0.	0.	0.	790.	94.	135.	66.	87.	
SOUTHEAST	0.	0.	0.	82.	132.	153.	157.	146.	122.	88.	49.	35.	24.	12.	0.	0.	0.	1001.	107.	159.	73.	99.	
HORIZ.	0.	0.	0.	34.	81.	123.	156.	176.	183.	176.	156.	123.	81.	34.	0.	0.	0.	1326.	128.	197.	83.	118.	



LOCATION SAYVILLE, NEW YORK LATITUDE 40 DEGREES 30 MINUTES

MONTH	4	HO	3225.	TOD	52.	TOT	50.	KT	.498	KD	.188						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	7.	20.	52.	82.	106.	122.	127.	122.	106.	82.	52.	20.	7.	0.	0.
SOUTHWEST	0.	0.	7.	20.	31.	42.	50.	76.	106.	129.	140.	138.	122.	90.	35.	0.	0.
WEST	0.	0.	7.	20.	31.	42.	50.	55.	56.	92.	120.	138.	139.	119.	54.	0.	0.
NORTHWEST	0.	0.	7.	20.	31.	42.	50.	55.	56.	55.	59.	81.	93.	89.	46.	0.	0.
NORTH	0.	0.	15.	20.	31.	42.	50.	55.	56.	55.	50.	42.	31.	20.	15.	0.	0.
NORTHEAST	0.	0.	46.	89.	93.	81.	59.	55.	56.	55.	50.	42.	31.	20.	7.	0.	0.
EAST	0.	0.	54.	119.	139.	138.	120.	92.	56.	55.	50.	42.	31.	20.	7.	0.	0.
SOUTHEAST	0.	0.	35.	90.	122.	138.	140.	129.	106.	76.	50.	42.	31.	20.	7.	0.	0.
HORIZ.	0.	0.	17.	61.	106.	146.	176.	196.	202.	196.	176.	146.	106.	61.	17.	0.	0.

MONTH	5	HO	3620.	TOD	63.	TOT	61.	KT	.522	KD	.185						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0	2	13	25	42	71	95	110	115	110	95	71	42	25	13	2	0
SOUTHWEST	0	2	13	25	36	46	53	67	99	122	134	134	121	93	52	2	0
WEST	0	2	13	25	36	46	53	58	60	97	126	145	150	135	90	3	0
NORTHWEST	0	2	13	25	36	46	53	58	60	58	76	98	112	112	82	3	0
NORTH	0	3	34	37	36	46	53	58	60	58	53	46	36	37	34	3	0
NORTHEAST	0	3	82	112	112	98	76	58	60	58	53	46	36	25	13	2	0
EAST	0	3	90	135	150	145	126	97	60	58	53	46	36	25	13	2	0
SOUTHEAST	0	2	52	93	121	134	122	99	67	53	46	36	25	13	2	0	0
HORIZ.	0	3	36	82	128	167	198	218	224	218	198	167	128	82	36	3	0
												</					

MONTH	6	HO	3762.	TOD	72.	TOT	70.	KT	.564	KD	.179						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	4.	14.	26.	38.	68.	93.	109.	114.	109.	93.	68.	38.	26.	14.	4.	0.
SOUTHWEST	0.	4.	14.	26.	38.	47.	55.	64.	99.	125.	139.	140.	127.	100.	59.	9.	0.
WEST	0.	4.	14.	26.	38.	47.	55.	60.	61.	103.	136.	158.	165.	151.	108.	18.	0.
NORTHWEST	0.	4.	14.	26.	38.	47.	55.	60.	61.	60.	86.	112.	128.	130.	102.	19.	0.
NORTH	0.	11.	45.	47.	38.	47.	55.	60.	61.	60.	55.	47.	38.	47.	45.	11.	0.
NORTHEAST	0.	19.	102.	130.	128.	112.	86.	60.	61.	60.	55.	47.	38.	26.	14.	4.	0.
EAST	0.	18.	108.	151.	165.	158.	136.	103.	61.	60.	55.	47.	38.	26.	14.	4.	0.
SOUTHEAST	0.	9.	59.	100.	127.	140.	139.	125.	99.	64.	55.	47.	38.	26.	14.	4.	0.
HORIZ.	0.	7.	46.	96.	144.	186.	219.	240.	247.	240.	219.	186.	144.	96.	46.	7.	0.

LOCATION		SAYVILLE, NEW YORK										LATITUDE 40 DEGREES 30 MINUTES																
MONTH	7	HO 3617.										TOT	75.	KT								KD		.180				
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD					
SOUTH	0.	2.	13.	25.	42.	73.	99.	115.	121.	115.	99.	73.	42.	25.	13.	2.	0.	859.	126.	163.	104.	126.	163.					
SOUTHWEST	0.	2.	13.	25.	36.	46.	54.	68.	103.	129.	143.	143.	129.	100.	55.	3.	0.	1048.	136.	182.	110.	138.	136.					
WEST	0.	2.	13.	25.	36.	46.	54.	59.	60.	101.	135.	156.	162.	145.	96.	3.	0.	1092.	139.	186.	112.	141.	139.					
NORTHWEST	0.	2.	13.	25.	36.	46.	54.	59.	60.	59.	79.	105.	121.	120.	88.	4.	0.	868.	126.	164.	10.	127.	126.					
NORTH	0.	3.	36.	39.	36.	46.	54.	59.	60.	59.	54.	46.	36.	39.	36.	3.	0.	604.	111.	137.	95.	111.	111.					
NORTHEAST	0.	4.	88.	120.	121.	105.	79.	59.	60.	59.	54.	46.	36.	25.	13.	2.	0.	868.	126.	164.	10.	127.	126.					
EAST	0.	3.	96.	145.	162.	156.	135.	101.	60.	59.	54.	46.	36.	25.	13.	2.	0.	1092.	139.	186.	112.	141.	139.					
SOUTHEAST	0.	3.	55.	100.	129.	143.	129.	103.	68.	54.	46.	36.	25.	13.	2.	0.	0.	1048.	136.	182.	110.	138.	136.					
HORIZ.	0.	3.	38.	87.	135.	178.	211.	232.	239.	232.	211.	178.	135.	87.	38.	3.	0.	2008.	191.	278.	14.	196.	191.					
MONTH	8	HO 3202.										TOT	75.	KT								KD		.185				
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD					
SOUTH	0.	0.	7.	20.	53.	86.	112.	128.	134.	128.	112.	86.	53.	20.	7.	0.	0.	945.	133.	178.	106.	130.	133.					
SOUTHWEST	0.	0.	7.	19.	31.	42.	50.	78.	111.	136.	148.	146.	129.	94.	34.	0.	0.	1025.	138.	186.	108.	135.	138.					
WEST	0.	0.	7.	19.	31.	42.	50.	55.	56.	96.	127.	146.	148.	124.	53.	0.	0.	953.	134.	178.	106.	131.	134.					
NORTHWEST	0.	0.	7.	19.	31.	42.	50.	55.	56.	55.	61.	84.	98.	93.	44.	0.	0.	696.	118.	151.	9.	115.	118.					
NORTH	0.	0.	14.	19.	31.	42.	50.	55.	56.	55.	50.	42.	31.	19.	14.	0.	0.	479.	105.	127.	90.	102.	105.					
NORTHEAST	0.	0.	44.	93.	98.	84.	61.	55.	56.	55.	50.	42.	31.	19.	7.	0.	0.	696.	118.	151.	9.	115.	118.					
EAST	0.	0.	53.	124.	148.	146.	127.	96.	56.	55.	50.	42.	31.	19.	7.	0.	0.	953.	134.	178.	106.	131.	134.					
SOUTHEAST	0.	0.	34.	94.	129.	146.	148.	136.	111.	78.	50.	42.	31.	19.	7.	0.	0.	1025.	138.	186.	10.	135.	138.					
HORIZ.	0.	0.	17.	63.	110.	153.	185.	206.	213.	206.	185.	153.	110.	63.	17.	0.	0.	1682.	178.	257.	13.	175.	178.					
MONTH	9	HO 2591.										TOT	67.	KT								KD		.184				
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD					
SOUTH	0.	0.	0.	26.	66.	104.	133.	151.	158.	151.	133.	104.	66.	26.	0.	0.	0.	1119.	146.	204.	106.	135.	146.					
SOUTHWEST	0.	0.	0.	12.	24.	35.	49.	91.	126.	152.	164.	160.	136.	82.	0.	0.	0.	1031.	140.	193.	103.	130.	140.					
WEST	0.	0.	0.	12.	24.	35.	43.	48.	50.	91.	124.	143.	140.	97.	0.	0.	0.	808.	124.	167.	95.	116.	124.					
NORTHWEST	0.	0.	0.	12.	24.	35.	43.	48.	50.	48.	43.	62.	76.	62.	0.	0.	0.	504.	104.	130.	85.	98.	104.					
NORTH	0.	0.	0.	12.	24.	35.	43.	48.	50.	48.	43.	35.	24.	12.	0.	0.	0.	374.	95.	114.	80.	90.	95.					
NORTHEAST	0.	0.	0.	62.	76.	62.	43.	48.	50.	48.	43.	35.	24.	12.	0.	0.	0.	504.	104.	130.	85.	98.	104.					
EAST	0.	0.	0.	97.	140.	143.	124.	91.	50.	48.	43.	35.	24.	12.	0.	0.	0.	808.	124.	167.	95.	116.	124.					
SOUTHEAST	0.	0.	0.	82.	136.	160.	164.	152.	126.	91.	49.	35.	24.	12.	0.	0.	0.	1031.	140.	193.	103.	130.	140.					
HORIZ.	0.	0.	1.	35.	83.	127.	162.	183.	191.	183.	162.	127.	83.	35.	1.	0.	0.	1372.	163.	234.	114.	150.	163.					

LOCATION SAYVILLE, NEW YORK LATITUDE 40 DEGREES 30 MINUTES

MONTH	10	HO	1937.	TOD	59.	TOT	57.	KT	.527	KD	.184																
ORIENTATION												HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION		SAG/DAYTIME SATGDS		SAG/ALL DAY SATGD	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20										
SOUTH	0.	0.	0.	11.	69.	114.	147.	168.	175.	168.	147.	114.	69.	11.	0.	0.	0.	1194.	145.	215.	95.	127.					
SOUTHWEST	0.	0.	0.	4.	15.	26.	58.	100.	136.	161.	171.	161.	124.	25.	0.	0.	0.	980.	129.	187.	88.	114.					
WEST	0.	0.	0.	4.	15.	26.	35.	40.	42.	43.	114.	129.	115.	26.	0.	0.	0.	629.	104.	141.	77.	94.					
NORTHWEST	0.	0.	0.	4.	15.	26.	35.	40.	42.	40.	35.	37.	48.	14.	0.	0.	0.	335.	83.	103.	68.	76.					
NORTH	0.	0.	0.	4.	15.	26.	35.	40.	42.	40.	35.	26.	15.	4.	0.	0.	0.	281.	79.	96.	66.	73.					
NORTHEAST	0.	0.	0.	14.	48.	37.	35.	40.	42.	40.	35.	26.	15.	4.	0.	0.	0.	335.	83.	103.	68.	76.					
EAST	0.	0.	0.	26.	115.	129.	114.	83.	42.	40.	35.	26.	15.	4.	0.	0.	0.	629.	104.	141.	77.	94.					
SOUTHEAST	0.	0.	0.	25.	124.	161.	171.	161.	136.	100.	58.	26.	15.	4.	0.	0.	0.	980.	129.	187.	88.	114.					
HORIZ.	0.	0.	0.	8.	50.	94.	129.	151.	158.	151.	129.	94.	50.	8.	0.	0.	0.	1021.	132.	192.	90.	116.					

MONTH	11	HO	1391.	TOD	48.	TOT	46.	KT	.450	KD	.185											
ORIENTATION																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGDS		SAG/ALL DAY SATGDS	
SOUTH	0.	0.	0.	42.	92.	124.	143.	149.	143.	124.	92.	42.	0.	0.	0.	0.	951.	125.	187.	77.	102.	
SOUTHWEST	0.	0.	0.	8.	19.	53.	87.	115.	133.	137.	121.	67.	0.	0.	0.	0.	739.	108.	156.	70.	89.	
WEST	0.	0.	0.	8.	17.	25.	30.	32.	62.	84.	89.	57.	0.	0.	0.	0.	404.	81.	107.	59.	70.	
NORTHWEST	0.	0.	0.	8.	17.	25.	30.	32.	30.	25.	17.	18.	0.	0.	0.	0.	202.	65.	78.	53.	58.	
NORTH	0.	0.	0.	8.	17.	25.	30.	32.	30.	25.	17.	8.	0.	0.	0.	0.	192.	64.	76.	52.	57.	
NORTHEAST	0.	0.	0.	18.	17.	25.	30.	32.	30.	25.	17.	8.	0.	0.	0.	0.	202.	65.	78.	53.	58.	
EAST	0.	0.	0.	57.	89.	84.	62.	32.	30.	25.	17.	8.	0.	0.	0.	0.	404.	81.	107.	59.	70.	
SOUTHEAST	0.	0.	0.	67.	121.	137.	133.	115.	87.	53.	19.	8.	0.	0.	0.	0.	739.	108.	156.	70.	89.	
HORIZ.	0.	0.	0.	20.	55.	83.	102.	108.	102.	83.	55.	20.	0.	0.	0.	0.	627.	99.	140.	66.	83.	

MONTH 12	HO 1186.	TOD	38.	TOT	36.	KT	.447	KD	.185												
ORIENTATION																					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGDS	SAG/ALL DAY SATGD		
SOUTH	0.	0.	0.	0.	28.	88.	123.	143.	150.	143.	123.	88.	28.	0.	0.	0.	915.	115.	178.	65.	89.
SOUTHWEST	0.	0.	0.	0.	5.	20.	53.	87.	114.	131.	134.	113.	43.	0.	0.	0.	700.	97.	145.	58.	76.
WEST	0.	0.	0.	0.	5.	14.	22.	27.	28.	58.	79.	80.	36.	0.	0.	0.	349.	67.	91.	47.	56.
NORTHWEST	0.	0.	0.	0.	5.	14.	22.	27.	28.	27.	22.	14.	10.	0.	0.	0.	169.	52.	64.	41.	46.
NORTH	0.	0.	0.	0.	5.	14.	22.	27.	28.	27.	22.	14.	5.	0.	0.	0.	164.	52.	63.	41.	45.
NORTHEAST	0.	0.	0.	0.	10.	14.	22.	27.	28.	27.	22.	14.	5.	0.	0.	0.	169.	52.	64.	41.	46.
EAST	0.	0.	0.	0.	36.	80.	79.	58.	28.	27.	22.	14.	5.	0.	0.	0.	349.	67.	91.	47.	56.
SOUTHEAST	0.	0.	0.	0.	43.	113.	134.	131.	114.	87.	53.	20.	5.	0.	0.	0.	700.	97.	145.	58.	76.
HORIZ.	0.	0.	0.	0.	11.	44.	72.	90.	97.	90.	72.	44.	11.	0.	0.	0.	531.	83.	119.	53.	67.

LOCATION SAYVILLE, NEW YORK LATITUDE 40 DEGREES 30 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	112.	117.	112.	104.	110.	117.	126.	133.	146.	145.	125.	115.	122.
SOUTHWEST	95.	103.	107.	109.	120.	130.	136.	138.	140.	129.	108.	97.	118.
WEST	68.	80.	94.	105.	122.	135.	139.	134.	124.	104.	81.	67.	104.
NORTHWEST	51.	59.	75.	92.	111.	124.	126.	118.	104.	83.	65.	52.	88.
NORTH	51.	55.	67.	80.	97.	109.	111.	105.	95.	79.	64.	52.	80.
NORTHEAST	51.	59.	75.	92.	111.	124.	126.	118.	104.	83.	65.	52.	88.
EAST	68.	80.	94.	105.	122.	135.	139.	134.	124.	104.	81.	67.	104.
SOUTHEAST	95.	103.	107.	109.	120.	130.	136.	138.	140.	129.	108.	97.	118.
HORIZ.	86.	107.	128.	145.	171.	189.	191.	178.	163.	132.	99.	83.	139.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	175.	185.	169.	147.	146.	152.	163.	178.	204.	215.	187.	178.	175.
SOUTHWEST	144.	159.	159.	155.	163.	174.	182.	186.	193.	187.	156.	145.	167.
WEST	95.	116.	135.	149.	167.	184.	186.	178.	167.	141.	107.	91.	143.
NORTHWEST	65.	79.	101.	124.	147.	164.	164.	151.	130.	103.	78.	64.	114.
NORTH	63.	72.	87.	102.	123.	137.	137.	127.	114.	96.	76.	63.	100.
NORTHEAST	65.	79.	101.	124.	147.	164.	164.	151.	130.	103.	78.	64.	114.
EAST	95.	116.	135.	149.	167.	184.	186.	178.	167.	141.	107.	91.	143.
SOUTHEAST	144.	159.	159.	155.	163.	174.	182.	186.	193.	187.	156.	145.	167.
HORIZ.	128.	165.	197.	220.	253.	279.	278.	257.	234.	192.	140.	119.	205.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	64.	70.	75.	79.	89.	98.	104.	106.	106.	95.	77.	65.	86.
SOUTHWEST	57.	63.	73.	81.	95.	106.	110.	108.	103.	88.	70.	58.	84.
WEST	46.	53.	66.	79.	96.	109.	112.	106.	95.	77.	59.	47.	79.
NORTHWEST	39.	44.	57.	72.	89.	102.	104.	97.	85.	68.	53.	41.	71.
NORTH	39.	42.	53.	65.	81.	93.	95.	90.	80.	66.	52.	41.	66.
NORTHEAST	39.	44.	57.	72.	89.	102.	104.	97.	85.	68.	53.	41.	71.
EAST	46.	53.	66.	79.	96.	109.	112.	106.	95.	77.	59.	47.	79.
SOUTHEAST	57.	63.	73.	81.	95.	106.	110.	108.	103.	88.	70.	58.	84.
HORIZ.	53.	65.	83.	101.	125.	142.	143.	131.	114.	90.	66.	53.	97.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	89.	100.	104.	103.	111.	119.	126.	130.	135.	127.	102.	89.	111.
SOUTHWEST	77.	88.	99.	107.	121.	133.	138.	135.	130.	114.	89.	76.	109.
WEST	57.	69.	87.	104.	123.	139.	141.	131.	116.	94.	70.	56.	99.
NORTHWEST	45.	53.	70.	90.	111.	127.	127.	115.	98.	76.	58.	46.	85.
NORTH	44.	49.	63.	78.	97.	110.	111.	102.	90.	73.	57.	45.	77.
NORTHEAST	45.	53.	70.	90.	111.	127.	127.	115.	98.	76.	58.	46.	85.
EAST	57.	69.	87.	104.	123.	139.	141.	131.	116.	94.	70.	56.	99.
SOUTHEAST	77.	88.	99.	107.	121.	133.	138.	135.	130.	114.	89.	76.	109.
HORIZ.	70.	91.	118.	143.	175.	198.	196.	175.	150.	116.	83.	67.	132.



LOCATION SCENECTADY, NEW YORK LATITUDE 42 DEGREES 50 MINUTES

MONTH	1	HO	1274.	TOD	25.	TOT	21.	KT	406	KD	.183																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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MONTH	2	HO	1854.	TOD	25.	TOT	22.	KT	.441	KD	.185	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	8.	55.	91.	118.	134.	140.	134.	118.	91.	55.	8.	0.	0.	0.
SOUTHWEST	0.	0.	0.	3.	14.	24.	50.	83.	110.	128.	135.	127.	96.	18.	0.	0.	0.
WEST	0.	0.	0.	3.	14.	24.	31.	36.	38.	68.	91.	101.	89.	19.	0.	0.	0.
NORTHWEST	0.	0.	0.	3.	14.	24.	31.	36.	38.	36.	31.	31.	38.	11.	0.	0.	0.
NORTH	0.	0.	0.	3.	14.	24.	31.	36.	38.	36.	31.	24.	14.	3.	0.	0.	0.
NORTHEAST	0.	0.	0.	11.	38.	31.	31.	36.	38.	36.	31.	24.	14.	3.	0.	0.	0.
EAST	0.	0.	0.	19.	89.	101.	91.	68.	38.	36.	31.	24.	14.	3.	0.	0.	0.
SOUTHEAST	0.	0.	0.	18.	96.	127.	135.	128.	110.	83.	50.	24.	14.	3.	0.	0.	0.
HORIZ.	0.	0.	0.	6.	41.	75.	103.	120.	126.	120.	103.	75.	41.	6.	0.	0.	0.
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MONTH	3	HO	2512.	TOD	35.	TOT	32.	KT	.433	KD	.185	HOURLY SOLAR RADIATION		DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGS
SOUTH	0.	0.	0.	22.	55.	84.	107.	122.	127.	122.	107.	84.	55.	22.	0.	0.	0.	93.	140.
SOUTHWEST	0.	0.	0.	11.	22.	32.	46.	77.	103.	121.	129.	124.	105.	65.	0.	0.	0.	88.	132.
WEST	0.	0.	0.	11.	22.	32.	39.	44.	45.	75.	98.	110.	107.	75.	0.	0.	0.	77.	111.
NORTHWEST	0.	0.	0.	11.	22.	32.	39.	44.	45.	44.	39.	50.	59.	48.	0.	0.	0.	63.	85.
NORTH	0.	0.	0.	11.	22.	32.	39.	44.	45.	44.	39.	32.	22.	11.	0.	0.	0.	57.	74.
NORTHEAST	0.	0.	0.	48.	59.	50.	39.	44.	45.	44.	39.	32.	22.	11.	0.	0.	0.	63.	85.
EAST	0.	0.	0.	75.	107.	110.	98.	75.	45.	44.	39.	32.	22.	11.	0.	0.	0.	77.	111.
SOUTHEAST	0.	0.	0.	65.	105.	124.	129.	121.	103.	77.	46.	32.	22.	11.	0.	0.	0.	88.	132.
HORIZ.	0.	0.	0.	29.	67.	101.	127.	144.	150.	144.	127.	101.	67.	29.	0.	0.	0.	104.	161.

LOCATION SCHENECTADY, NEW YORK LATITUDE 42 DEGREES 50 MINUTES

MONTH	4	HO	3175.	TOD	48.	TOT	45.	KT	.413	KD	.184						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	7.	20.	46.	71.	90.	103.	107.	103.	90.	71.	46.	20.	7.	0.	0.
SOUTHWEST	0.	0.	7.	18.	29.	38.	45.	68.	91.	107.	114.	111.	97.	72.	29.	0.	0.
WEST	0.	0.	7.	18.	29.	38.	45.	49.	51.	77.	97.	109.	109.	92.	44.	0.	0.
NORTHWEST	0.	0.	7.	18.	29.	38.	45.	49.	51.	49.	50.	65.	73.	69.	37.	0.	0.
NORTH	0.	0.	13.	18.	29.	38.	45.	49.	51.	49.	45.	38.	29.	18.	13.	0.	0.
NORTHEAST	0.	0.	37.	69.	73.	65.	50.	49.	51.	49.	45.	38.	29.	18.	7.	0.	0.
EAST	0.	0.	44.	92.	109.	109.	97.	77.	51.	49.	45.	38.	29.	18.	7.	0.	0.
SOUTHEAST	0.	0.	29.	72.	97.	111.	114.	107.	91.	68.	45.	38.	29.	18.	7.	0.	0.
HORIZ.	0.	0.	17.	52.	87.	118.	143.	158.	163.	158.	143.	118.	87.	52.	17.	0.	0.

MONTH	5	HO	3607.	TOD	62.	TOT	58.	KT	.438	KD	.185						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	3.	13.	24.	41.	65.	84.	97.	101.	97.	84.	65.	41.	24.	13.	3.	0.
SOUTHWEST	0.	3.	13.	24.	34.	43.	49.	64.	88.	105.	113.	111.	99.	77.	44.	4.	0.
WEST	0.	3.	13.	24.	34.	43.	49.	54.	55.	83.	104.	118.	120.	107.	73.	7.	0.
NORTHWEST	0.	3.	13.	24.	34.	43.	49.	54.	55.	54.	63.	80.	90.	88.	67.	7.	0.
NORTH	0.	5.	29.	32.	34.	43.	49.	54.	55.	54.	49.	43.	34.	32.	29.	5.	0.
NORTHEAST	0.	7.	67.	88.	90.	80.	63.	54.	55.	54.	49.	43.	34.	24.	13.	3.	0.
EAST	0.	7.	73.	107.	120.	118.	104.	83.	55.	54.	49.	43.	34.	24.	13.	3.	0.
SOUTHEAST	0.	4.	44.	77.	99.	111.	113.	105.	88.	64.	49.	43.	34.	24.	13.	3.	0.
HORIZ.	0.	5.	34.	71.	107.	139.	163.	179.	184.	179.	163.	139.	107.	71.	34.	5.	0.

MONTH	6	HO	3765.	TOD	71.	TOT	68.	KT	.448	KD	.185											
ORIENTATION	4	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		SATGS	SATGD	SATGS	SATGD
SOUTH	0.	5.	15.	25.	38.	62.	81.	93.	98.	93.	81.	62.	38.	25.	15.	5.	0.	736.	111.	141.	93.	112.
SOUTHWEST	0.	5.	15.	25.	36.	44.	51.	62.	86.	103.	112.	110.	99.	77.	47.	10.	0.	881.	119.	155.	98.	121.
WEST	0.	5.	15.	25.	36.	44.	51.	55.	57.	84.	107.	120.	123.	112.	81.	21.	0.	935.	121.	160.	100.	125.
NORTHWEST	0.	5.	15.	25.	36.	44.	51.	55.	57.	55.	69.	86.	96.	95.	77.	22.	0.	787.	113.	146.	95.	116.
NORTH	0.	13.	36.	38.	36.	44.	51.	55.	57.	55.	51.	44.	36.	38.	36.	13.	0.	602.	103.	128.	89.	104.
NORTHEAST	0.	22.	77.	95.	96.	86.	69.	55.	57.	55.	51.	44.	36.	25.	15.	5.	0.	787.	113.	146.	95.	116.
EAST	0.	21.	81.	112.	123.	120.	107.	84.	57.	55.	51.	44.	36.	25.	15.	5.	0.	935.	121.	160.	100.	125.
SOUTHEAST	0.	10.	47.	77.	99.	110.	112.	103.	86.	62.	51.	44.	36.	25.	15.	5.	0.	881.	119.	155.	98.	121.
HORIZ.	0.	9.	41.	78.	115.	147.	171.	187.	192.	187.	171.	147.	115.	78.	41.	9.	0.	1687.	162.	232.	126.	170.

LOCATION SCENECTADY, NEW YORK LATITUDE 42 DEGREES 50 MINUTES

MONTH	7	H0	3605.	T00	77.	T0T	73.	KT	.454	KD	.186	HOURLY SOLAR RADIATION		DAILY TOTAL RADIATION		SAG/DAYTIME SATG		SAG/ALL DAY SATG				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	3.	13.	24.	41.	66.	87.	100.	104.	100.	87.	66.	41.	24.	13.	3.	0.	772.	120.	153.	99.	119.
SOUTHWEST	0.	3.	13.	24.	34.	43.	50.	65.	90.	108.	117.	116.	103.	79.	45.	5.	0.	895.	127.	165.	103.	127.
WEST	0.	3.	13.	24.	34.	43.	50.	54.	56.	85.	108.	122.	125.	111.	75.	7.	0.	912.	128.	167.	104.	128.
NORTHWEST	0.	3.	13.	24.	34.	43.	50.	54.	56.	54.	65.	83.	93.	92.	69.	7.	0.	741.	118.	150.	98.	117.
NORTH	0.	5.	30.	33.	34.	43.	50.	54.	56.	54.	50.	43.	34.	33.	30.	5.	0.	555.	108.	132.	92.	106.
NORTHEAST	0.	7.	69.	92.	93.	83.	65.	54.	56.	54.	50.	43.	34.	24.	13.	3.	0.	741.	118.	150.	98.	117.
EAST	0.	7.	75.	111.	125.	122.	108.	85.	56.	54.	50.	43.	34.	24.	13.	3.	0.	912.	128.	167.	104.	128.
SOUTHEAST	0.	5.	45.	79.	103.	116.	117.	108.	90.	65.	50.	43.	34.	24.	13.	3.	0.	895.	127.	165.	103.	127.
HORIZ.	0.	5.	35.	73.	111.	144.	170.	186.	191.	186.	170.	144.	111.	73.	35.	5.	0.	1637.	168.	238.	129.	172.

MONTH	8	H0	3153.	TOD	74.	TOT	70.	KT	458	KD	.186	DAILY TOTAL RADIATION		SAG/DAYTIME SATG		SAG/ALL DAY SATG	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	7.	20.	49.	77.	100.	114.	119.	114.	100.	77.	49.	20.	7.	0.	0.
SOUTHWEST	0.	0.	7.	19.	30.	39.	46.	73.	100.	119.	128.	125.	110.	79.	31.	0.	0.
WEST	0.	0.	7.	19.	30.	39.	46.	51.	53.	84.	108.	123.	123.	103.	47.	0.	0.
NORTHWEST	0.	0.	7.	19.	30.	39.	46.	51.	53.	51.	52.	71.	82.	77.	39.	0.	0.
NORTH	0.	0.	14.	19.	30.	39.	46.	51.	53.	51.	46.	39.	30.	19.	14.	0.	0.
NORTHEAST	0.	0.	39.	77.	82.	71.	52.	51.	53.	51.	46.	39.	30.	19.	7.	0.	0.
EAST	0.	0.	47.	103.	123.	123.	108.	84.	53.	51.	46.	39.	30.	19.	7.	0.	0.
SOUTHEAST	0.	0.	31.	79.	110.	125.	128.	119.	100.	73.	46.	39.	30.	19.	7.	0.	0.
HORIZ.	0.	0.	17.	56.	95.	131.	158.	175.	181.	175.	158.	131.	95.	56.	17.	0.	0.

MONTH	9	H0	2502.	TOD	65.	TOT	62.	KT	.426	KD	.184	DAILY TOTAL RADIATION		SAG/DAYTIME SATG		SAG/ALL DAY SATG	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	21.	53.	82.	104.	119.	124.	119.	104.	82.	53.	21.	0.	0.	0.
SOUTHWEST	0.	0.	0.	11.	22.	31.	45.	75.	101.	118.	125.	120.	100.	60.	0.	0.	0.
WEST	0.	0.	0.	11.	22.	31.	39.	43.	45.	73.	95.	107.	102.	70.	0.	0.	0.
NORTHWEST	0.	0.	0.	11.	22.	31.	39.	43.	45.	43.	39.	49.	57.	45.	0.	0.	0.
NORTH	0.	0.	0.	11.	22.	31.	39.	43.	45.	43.	39.	31.	22.	11.	0.	0.	0.
NORTHEAST	0.	0.	0.	45.	57.	49.	39.	43.	45.	43.	39.	31.	22.	11.	0.	0.	0.
EAST	0.	0.	70.	102.	107.	95.	73.	45.	43.	39.	31.	22.	11.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	60.	100.	120.	125.	118.	101.	75.	45.	31.	22.	11.	0.	0.	0.
HORIZ.	0.	0.	1.	28.	65.	99.	125.	141.	147.	141.	125.	99.	65.	28.	1.	0.	0.

LOCATION	SCHENECTADY, NEW YORK										LATITUDE 42 DEGREES 50 MINUTES											
MONTH 10	HO 1820.	TOD	53.	TOT	50.	KT	.420	KD	.184													
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	6.	50.	85.	110.	126.	131.	126.	110.	85.	50.	6.	0.	0.	0.	885.	117.	169.	79.	102.
SOUTHWEST	0.	0.	0.	3.	13.	23.	48.	78.	103.	120.	126.	116.	86.	12.	0.	0.	0.	729.	106.	149.	74.	93.
WEST	0.	0.	0.	3.	13.	23.	30.	35.	36.	64.	85.	93.	79.	13.	0.	0.	0.	475.	87.	116.	66.	78.
NORTHWEST	0.	0.	0.	3.	13.	23.	30.	35.	36.	35.	30.	29.	34.	8.	0.	0.	0.	276.	73.	89.	59.	66.
NORTH	0.	0.	0.	3.	13.	23.	30.	35.	36.	35.	30.	23.	13.	3.	0.	0.	0.	244.	71.	85.	58.	65.
NORTHEAST	0.	0.	0.	8.	34.	29.	30.	35.	36.	35.	30.	23.	13.	3.	0.	0.	0.	276.	73.	89.	59.	66.
EAST	0.	0.	0.	13.	79.	93.	85.	64.	36.	35.	30.	23.	13.	3.	0.	0.	0.	475.	87.	116.	66.	78.
SOUTHEAST	0.	0.	0.	12.	86.	116.	126.	120.	103.	78.	48.	23.	13.	3.	0.	0.	0.	729.	106.	149.	74.	93.
HORIZ.	0.	0.	0.	5.	37.	70.	96.	113.	119.	113.	96.	70.	37.	5.	0.	0.	0.	764.	108.	154.	75.	95.
MONTH 11	HO 1262.	TOD	40.	TOT	39.	KT	.309	KD	.179													
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	0.	20.	50.	69.	81.	85.	81.	69.	50.	20.	0.	0.	0.	0.	525.	83.	118.	55.	69.
SOUTHWEST	0.	0.	0.	0.	6.	15.	35.	53.	67.	75.	75.	64.	30.	0.	0.	0.	0.	420.	75.	103.	52.	63.
WEST	0.	0.	0.	0.	6.	14.	20.	24.	25.	40.	49.	48.	26.	0.	0.	0.	0.	252.	61.	78.	47.	53.
NORTHWEST	0.	0.	0.	0.	6.	14.	20.	24.	25.	24.	20.	14.	10.	0.	0.	0.	0.	157.	53.	63.	44.	48.
NORTH	0.	0.	0.	0.	6.	14.	20.	24.	25.	24.	20.	14.	6.	0.	0.	0.	0.	153.	53.	63.	43.	47.
NORTHEAST	0.	0.	0.	0.	10.	14.	20.	24.	25.	24.	20.	14.	6.	0.	0.	0.	0.	157.	53.	63.	44.	48.
EAST	0.	0.	0.	0.	26.	48.	49.	40.	25.	24.	20.	14.	6.	0.	0.	0.	0.	252.	61.	78.	47.	53.
SOUTHEAST	0.	0.	0.	0.	30.	64.	75.	75.	67.	53.	35.	15.	6.	0.	0.	0.	0.	420.	75.	103.	52.	63.
HORIZ.	0.	0.	0.	0.	12.	34.	52.	64.	68.	64.	52.	34.	12.	0.	0.	0.	0.	391.	72.	98.	51.	61.
MONTH 12	HO 1057.	TOD	28.	TOT	26.	KT	.331	KD	.180													
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS	
SOUTH	0.	0.	0.	0.	11.	52.	77.	90.	95.	90.	77.	52.	11.	0.	0.	0.	0.	556.	76.	116.	44.	58.
SOUTHWEST	0.	0.	0.	0.	3.	15.	36.	57.	74.	83.	82.	66.	16.	0.	0.	0.	0.	433.	66.	97.	40.	51.
WEST	0.	0.	0.	0.	3.	11.	18.	22.	23.	40.	50.	48.	14.	0.	0.	0.	0.	228.	48.	64.	33.	39.
NORTHWEST	0.	0.	0.	0.	3.	11.	18.	22.	23.	22.	18.	11.	5.	0.	0.	0.	0.	133.	40.	49.	30.	34.
NORTH	0.	0.	0.	0.	3.	11.	18.	22.	23.	22.	18.	11.	3.	0.	0.	0.	0.	131.	39.	49.	30.	34.
NORTHEAST	0.	0.	0.	0.	5.	11.	18.	22.	23.	22.	18.	11.	3.	0.	0.	0.	0.	133.	40.	49.	30.	34.
EAST	0.	0.	0.	0.	14.	48.	50.	40.	23.	22.	18.	11.	3.	0.	0.	0.	0.	228.	48.	64.	33.	39.
SOUTHEAST	0.	0.	0.	0.	16.	66.	82.	83.	74.	57.	36.	15.	3.	0.	0.	0.	0.	433.	66.	97.	40.	51.
HORIZ.	0.	0.	0.	0.	6.	28.	48.	60.	65.	60.	48.	28.	6.	0.	0.	0.	0.	350.	59.	83.	37.	46.



## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	91.	93.	93.	93.	104.	111.	120.	126.	124.	117.	83.	76.	103.
SOUTHWEST	76.	81.	88.	95.	110.	119.	127.	129.	108.	106.	75.	66.	99.
WEST	53.	62.	77.	92.	111.	121.	128.	124.	108.	108.	61.	48.	89.
NORTHWEST	39.	46.	63.	81.	102.	113.	118.	111.	93.	73.	53.	40.	78.
NORTH	39.	43.	57.	73.	92.	103.	108.	101.	87.	71.	53.	39.	72.
NORTHEAST	39.	46.	63.	81.	102.	113.	118.	111.	93.	73.	53.	40.	78.
EAST	53.	62.	77.	92.	111.	121.	128.	124.	108.	108.	61.	48.	89.
SOUTHEAST	76.	81.	88.	95.	110.	119.	127.	129.	120.	106.	75.	66.	99.
HORIZ.	67.	83.	104.	123.	150.	162.	168.	161.	137.	108.	72.	59.	116.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	146.	149.	140.	129.	136.	141.	153.	166.	170.	169.	118.	116.	145.
SOUTHWEST	119.	128.	132.	134.	148.	155.	165.	171.	162.	149.	103.	97.	138.
WEST	76.	92.	111.	127.	149.	160.	167.	163.	141.	116.	78.	64.	120.
NORTHWEST	51.	63.	85.	108.	133.	146.	150.	140.	115.	89.	63.	49.	99.
NORTH	50.	58.	74.	93.	116.	128.	132.	120.	105.	85.	63.	49.	90.
NORTHEAST	51.	63.	85.	108.	133.	146.	150.	140.	115.	89.	63.	49.	99.
EAST	76.	92.	111.	127.	149.	160.	167.	163.	141.	116.	78.	64.	120.
SOUTHEAST	119.	128.	132.	134.	148.	155.	165.	171.	162.	149.	103.	97.	138.
HORIZ.	102.	132.	161.	184.	218.	232.	238.	229.	192.	154.	98.	83.	169.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	48.	53.	62.	70.	84.	93.	99.	100.	92.	79.	55.	44.	73.
SOUTHWEST	42.	47.	59.	72.	88.	98.	103.	101.	89.	74.	52.	40.	72.
WEST	32.	38.	54.	70.	88.	100.	104.	99.	84.	66.	47.	33.	68.
NORTHWEST	27.	31.	46.	64.	83.	95.	98.	92.	76.	59.	44.	30.	62.
NORTH	27.	30.	43.	59.	77.	89.	92.	86.	73.	58.	43.	30.	59.
NORTHEAST	27.	31.	46.	64.	83.	95.	98.	92.	76.	59.	44.	30.	62.
EAST	32.	38.	54.	70.	88.	100.	104.	99.	84.	66.	47.	33.	68.
SOUTHEAST	42.	47.	59.	72.	88.	98.	103.	101.	89.	74.	52.	40.	72.
HORIZ.	38.	48.	67.	87.	112.	126.	129.	120.	98.	75.	51.	37.	82.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	69.	78.	85.	91.	104.	112.	119.	122.	115.	102.	69.	58.	94.
SOUTHWEST	58.	68.	81.	93.	111.	121.	127.	125.	111.	93.	63.	51.	92.
WEST	41.	52.	71.	90.	112.	125.	128.	121.	100.	78.	53.	39.	84.
NORTHWEST	32.	39.	58.	79.	102.	116.	117.	108.	87.	66.	48.	34.	74.
NORTH	31.	37.	52.	70.	91.	104.	106.	98.	82.	65.	47.	34.	68.
NORTHEAST	32.	39.	58.	79.	102.	116.	117.	108.	87.	66.	48.	34.	74.
EAST	41.	52.	71.	90.	112.	125.	128.	121.	100.	78.	53.	39.	84.
SOUTHEAST	58.	68.	81.	93.	111.	121.	127.	125.	111.	93.	63.	51.	92.
HORIZ.	52.	70.	96.	122.	154.	170.	172.	158.	126.	95.	61.	46.	110.

LOCATION	SEABROOK, NEW JERSEY	LATITUDE	39 DEGREES	30 MINUTES																								
MONTH	1	HO	1457.	TOD	39.	TOT	36.	KT	.426	KD	.184																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS							
SOUTH	0.	0.	0.	0.	43.	87.	115.	132.	138.	132.	115.	87.	43.	0.	0.	0.	0.	892.	110.	168.	64.							
SOUTHWEST	0.	0.	0.	0.	8.	19.	51.	81.	107.	123.	127.	114.	68.	0.	0.	0.	0.	699.	95.	140.	58.							
WEST	0.	0.	0.	0.	8.	18.	26.	30.	32.	60.	80.	85.	59.	0.	0.	0.	0.	397.	71.	97.	49.							
NORTHWEST	0.	0.	0.	0.	8.	18.	26.	30.	32.	30.	26.	18.	19.	0.	0.	0.	0.	207.	56.	69.	42.							
NORTH	0.	0.	0.	0.	8.	18.	26.	30.	32.	30.	26.	18.	8.	0.	0.	0.	0.	196.	55.	68.	42.							
NORTHEAST	0.	0.	0.	0.	19.	18.	26.	30.	32.	30.	26.	18.	8.	0.	0.	0.	0.	207.	56.	69.	42.							
EAST	0.	0.	0.	0.	59.	85.	80.	60.	32.	30.	26.	18.	8.	0.	0.	0.	0.	397.	71.	97.	49.							
SOUTHEAST	0.	0.	0.	0.	68.	114.	127.	123.	107.	81.	51.	19.	8.	0.	0.	0.	0.	699.	95.	140.	58.							
HORIZ.	0.	0.	0.	0.	21.	55.	82.	99.	105.	99.	82.	55.	21.	0.	0.	0.	0.	621.	89.	129.	56.							

MONTH	2	HO	2020.	TOD	38.	TOT	35.	KT	.453	KD	.186																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS							
SOUTH	0.	0.	0.	13.	59.	95.	121.	137.	142.	137.	121.	95.	59.	13.	0.	0.	0.	991.	108.	165.	67.							
SOUTHWEST	0.	0.	0.	4.	16.	26.	51.	85.	113.	132.	140.	132.	104.	29.	0.	0.	0.	832.	97.	145.	62.							
WEST	0.	0.	0.	4.	16.	26.	34.	39.	41.	73.	97.	108.	98.	31.	0.	0.	0.	566.	78.	111.	54.							
NORTHWEST	0.	0.	0.	4.	16.	26.	34.	39.	41.	39.	34.	36.	43.	17.	0.	0.	0.	329.	61.	80.	46.							
NORTH	0.	0.	0.	4.	16.	26.	34.	39.	41.	39.	34.	26.	16.	4.	0.	0.	0.	280.	57.	74.	44.							
NORTHEAST	0.	0.	0.	17.	43.	36.	34.	39.	41.	39.	34.	26.	16.	4.	0.	0.	0.	329.	61.	80.	46.							
EAST	0.	0.	0.	31.	98.	108.	97.	73.	41.	39.	34.	26.	16.	4.	0.	0.	0.	566.	78.	111.	54.							
SOUTHEAST	0.	0.	0.	29.	104.	132.	140.	132.	113.	85.	51.	26.	16.	4.	0.	0.	0.	832.	97.	145.	62.							
HORIZ.	0.	0.	0.	9.	47.	85.	114.	133.	139.	133.	114.	85.	47.	9.	0.	0.	0.	916.	103.	156.	65.							

MONTH	3	HO	2641.	TOD	44.	TOT	41.	KT	.476	KD	.187																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	DAYTIME SATGS	SAG/ALL DAY SATGS							
SOUTH	0.	0.	0.	25.	60.	92.	117.	133.	138.	133.	117.	92.	60.	25.	0.	0.	0.	991.	107.	159.	73.							
SOUTHWEST	0.	0.	0.	12.	24.	34.	47.	82.	112.	133.	143.	140.	120.	75.	0.	0.	0.	924.	103.	151.	71.							
WEST	0.	0.	0.	12.	24.	34.	43.	48.	50.	84.	111.	126.	123.	89.	0.	0.	0.	743.	91.	130.	65.							
NORTHWEST	0.	0.	0.	12.	24.	34.	43.	48.	50.	48.	43.	58.	69.	57.	0.	0.	0.	485.	75.	100.	57.							
NORTH	0.	0.	0.	12.	24.	34.	43.	48.	50.	48.	43.	34.	24.	12.	0.	0.	0.	371.	68.	87.	53.							
NORTHEAST	0.	0.	0.	57.	69.	58.	43.	48.	50.	48.	43.	34.	24.	12.	0.	0.	0.	485.	75.	100.	57.							
EAST	0.	0.	0.	89.	123.	126.	111.	84.	50.	48.	43.	34.	24.	12.	0.	0.	0.	743.	91.	130.	65.							
SOUTHEAST	0.	0.	0.	75.	120.	140.	143.	133.	112.	82.	47.	34.	24.	12.	0.	0.	0.	924.	103.	151.	71.							
HORIZ.	0.	0.	0.	33.	77.	117.	147.	167.	173.	167.	147.	117.	77.	33.	0.	0.	0.	1255.	124.	190.	82.							

LOCATION SEABROOK, NEW JERSEY LATITUDE 39 DEGREES 30 MINUTES

MONTH	4	HO	3245.	TOD	55.	TOT	49.	KT	441	KD	.187							
ORIENTATION	4	5	6	7	8	9	10	11	12	HOURLY SOLAR RADIATION				16	17	18	19	20
										13	14	15	16					
SOUTH	0.	0.	7.	19.	49.	78.	101.	116.	121.	116.	101.	78.	49.	19.	7.	0.	0.	0.
SOUTHWEST	0.	0.	7.	19.	31.	41.	49.	73.	102.	123.	133.	132.	116.	86.	32.	0.	0.	0.
WEST	0.	0.	7.	19.	31.	41.	49.	54.	56.	90.	116.	132.	133.	113.	50.	0.	0.	0.
NORTHWEST	0.	0.	7.	19.	31.	41.	49.	54.	56.	54.	60.	80.	91.	85.	42.	0.	0.	0.
NORTH	0.	0.	14.	19.	31.	41.	49.	54.	56.	54.	49.	41.	31.	19.	14.	0.	0.	0.
NORTHEAST	0.	0.	42.	85.	91.	80.	60.	54.	56.	54.	49.	41.	31.	19.	7.	0.	0.	0.
EAST	0.	0.	50.	113.	133.	132.	116.	90.	56.	54.	49.	41.	31.	19.	7.	0.	0.	0.
SOUTHEAST	0.	0.	32.	86.	116.	132.	133.	123.	102.	73.	49.	41.	31.	19.	7.	0.	0.	0.
HORIZ.	0.	0.	17.	59.	103.	142.	172.	190.	197.	190.	172.	142.	103.	59.	17.	0.	0.	0.
DAILY TOTAL RADIATION																		
SAG/DAYTIME SATGS SATGD																		
SAG/ALL DAY SATGS SATGD																		

MONTH	5	HO	3624.	TOD	65.	TOT	59.	KT	.504	KD	.187						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	2.	12.	24.	40.	68.	90.	104.	109.	104.	90.	68.	40.	24.	12.	2.	0.
SOUTHWEST	0.	2.	12.	24.	36.	46.	53.	65.	95.	116.	128.	127.	114.	88.	48.	2.	0.
WEST	0.	2.	12.	24.	36.	46.	53.	58.	60.	94.	122.	139.	143.	127.	83.	2.	0.
NORTHWEST	0.	2.	12.	24.	36.	46.	53.	58.	60.	58.	76.	96.	108.	106.	77.	2.	0.
NORTH	0.	2.	32.	37.	36.	46.	53.	58.	60.	58.	53.	46.	36.	37.	32.	2.	0.
NORTHEAST	0.	2.	77.	106.	108.	96.	76.	58.	60.	58.	53.	46.	36.	24.	12.	2.	0.
EAST	0.	2.	83.	127.	143.	139.	122.	94.	60.	58.	53.	46.	36.	24.	12.	2.	0.
SOUTHEAST	0.	2.	48.	88.	114.	127.	128.	116.	95.	65.	53.	46.	36.	24.	12.	2.	0.
HORIZ.	0.	3.	34.	79.	123.	162.	192.	211.	217.	211.	192.	162.	123.	79.	34.	3.	0.

MONTH	6	HO	3760.	TOD	74.	TOT	69.	KT	.522	KD	.185						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	3.	14.	26.	37.	63.	85.	100.	105.	100.	85.	63.	37.	26.	14.	3.	0.
SOUTHWEST	0.	3.	14.	26.	37.	47.	55.	61.	92.	114.	127.	127.	115.	90.	52.	7.	0.
WEST	0.	3.	14.	26.	37.	47.	55.	59.	61.	97.	126.	144.	149.	135.	94.	13.	0.
NORTHWEST	0.	3.	14.	26.	37.	47.	55.	59.	61.	59.	83.	105.	118.	117.	90.	13.	0.
NORTH	0.	8.	41.	45.	39.	47.	55.	59.	61.	59.	55.	47.	39.	45.	41.	8.	0.
NORTHEAST	0.	13.	90.	117.	118.	105.	83.	59.	61.	59.	55.	47.	37.	26.	14.	3.	0.
EAST	0.	13.	94.	135.	149.	144.	126.	97.	61.	59.	55.	47.	37.	26.	14.	3.	0.
SOUTHEAST	0.	7.	52.	90.	115.	127.	127.	114.	92.	61.	55.	47.	37.	26.	14.	3.	0.
HORIZ.	0.	6.	42.	88.	133.	172.	203.	222.	229.	222.	203.	172.	133.	88.	42.	6.	0.
													</				

LOCATION	SEABROOK, NEW JERSEY	LATITUDE 39 DEGREES 30 MINUTES																											
MONTH	7	HO	3621.	TOD	80.	TOT	74.	KT	.530	KD	.184																		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION						SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD					
SOUTH	0.	2.	12.	24.	40.	69.	93.	108.	114.	108.	93.	69.	40.	24.	12.	2.	0.	812.	126.	162.	101.	123.	126.	162.	101.	123.			
SOUTHWEST	0.	2.	12.	24.	36.	46.	54.	66.	98.	122.	134.	134.	121.	93.	50.	2.	0.	994.	137.	180.	108.	134.	137.	180.	108.	134.			
WEST	0.	2.	12.	24.	36.	46.	54.	58.	60.	98.	128.	148.	152.	136.	87.	2.	0.	1044.	139.	185.	109.	137.	139.	185.	109.	137.			
NORTHWEST	0.	2.	12.	24.	36.	46.	54.	58.	60.	58.	79.	101.	115.	113.	81.	2.	0.	842.	128.	165.	10.	124.	128.	165.	10.	124.			
NORTH	0.	2.	34.	39.	36.	46.	54.	58.	60.	58.	54.	46.	36.	39.	34.	2.	0.	597.	114.	140.	94.	110.	114.	140.	94.	110.			
NORTHEAST	0.	2.	81.	113.	115.	101.	79.	58.	60.	58.	54.	46.	36.	24.	12.	2.	0.	842.	128.	165.	102.	124.	128.	165.	102.	124.			
EAST	0.	2.	87.	136.	152.	148.	128.	98.	60.	58.	54.	46.	36.	24.	12.	2.	0.	1044.	139.	185.	10.	137.	139.	185.	10.	137.			
SOUTHEAST	0.	2.	50.	93.	121.	134.	134.	122.	98.	66.	54.	46.	36.	24.	12.	2.	0.	994.	137.	180.	108.	134.	137.	180.	108.	134.			
HORIZ.	0.	3.	35.	83.	129.	170.	202.	222.	229.	202.	202.	170.	129.	83.	35.	3.	0.	1919.	189.	273.	13.	190.	189.	273.	13.	190.			

MONTH	8	HO	3222.	TOD	78.	TOT	73.	KT	.517	KD	.186																		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION						SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD					
SOUTH	0.	0.	7.	19.	51.	83.	108.	124.	130.	124.	108.	83.	51.	19.	7.	0.	0.	916.	134.	177.	10.	128.	134.	177.	10.	128.			
SOUTHWEST	0.	0.	7.	19.	31.	42.	50.	76.	108.	132.	144.	143.	126.	91.	32.	0.	0.	1002.	139.	187.	10.	134.	139.	187.	10.	134.			
WEST	0.	0.	7.	19.	31.	42.	50.	55.	57.	95.	125.	143.	145.	121.	50.	0.	0.	940.	136.	180.	105.	130.	136.	180.	105.	130.			
NORTHWEST	0.	0.	7.	19.	31.	42.	50.	55.	57.	55.	62.	85.	97.	91.	42.	0.	0.	694.	120.	153.	97.	115.	120.	153.	97.	115.			
NORTH	0.	0.	14.	19.	31.	42.	50.	55.	57.	55.	50.	42.	31.	19.	14.	0.	0.	480.	107.	130.	90.	102.	107.	130.	90.	102.			
NORTHEAST	0.	0.	42.	91.	97.	85.	62.	55.	57.	55.	50.	42.	31.	19.	7.	0.	0.	694.	120.	153.	97.	115.	120.	153.	97.	115.			
EAST	0.	0.	50.	121.	145.	125.	95.	57.	57.	55.	50.	42.	31.	19.	7.	0.	0.	940.	136.	180.	105.	130.	136.	180.	105.	130.			
SOUTHEAST	0.	0.	32.	91.	126.	143.	144.	132.	108.	76.	50.	42.	31.	19.	7.	0.	0.	1002.	139.	187.	107.	134.	139.	187.	107.	134.			
HORIZ.	0.	0.	16.	62.	109.	151.	184.	205.	212.	205.	184.	151.	109.	62.	16.	0.	0.	1667.	180.	259.	130.	174.	180.	259.	130.	174.			

MONTH	9	HO	2628.	TOD	70.	TOT	68.	KT	.524	KD	.185																		
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION						SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD					
SOUTH	0.	0.	0.	26.	65.	101.	130.	148.	154.	148.	130.	101.	65.	26.	0.	0.	0.	1093.	144.	201.	106.	134.	144.	201.	106.	134.			
SOUTHWEST	0.	0.	0.	12.	24.	35.	48.	89.	124.	149.	161.	157.	134.	81.	0.	0.	0.	1014.	139.	192.	103.	130.	139.	192.	103.	130.			
WEST	0.	0.	0.	12.	24.	35.	44.	49.	51.	91.	123.	141.	138.	96.	0.	0.	0.	805.	124.	166.	96.	117.	124.	166.	96.	117.			
NORTHWEST	0.	0.	0.	12.	24.	35.	44.	49.	51.	49.	44.	63.	76.	62.	0.	0.	0.	509.	104.	131.	86.	99.	104.	131.	86.	99.			
NORTH	0.	0.	0.	12.	24.	35.	44.	49.	51.	49.	44.	35.	24.	12.	0.	0.	0.	379.	95.	115.	81.	91.	95.	115.	81.	91.			
NORTHEAST	0.	0.	0.	62.	76.	63.	44.	49.	51.	49.	44.	35.	24.	12.	0.	0.	0.	509.	104.	131.	86.	99.	104.	131.	86.	99.			
EAST	0.	0.	0.	96.	138.	141.	123.	91.	51.	49.	44.	35.	24.	12.	0.	0.	0.	805.	124.	166.	96.	117.	124.	166.	96.	117.			
SOUTHEAST	0.	0.	0.	81.	134.	157.	161.	149.	124.	89.	48.	35.	24.	12.	0.	0.	0.	1014.	139.	192.	103.	130.	139.	192.	103.	130.			
HORIZ.	0.	0.	1.	35.	84.	128.	162.	184.	191.	184.	162.	128.	84.	35.	1.	0.	0.	1376.	163.	235.	115.	151.	163.	235.	115.	151.			



LOCATION	SEABROOK, NEW JERSEY				LATITUDE 39 DEGREES 30 MINUTES																	
MONTH 10	HO 1986.	TOD 61.	TOT 58.	KT .508	KD .187																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS		
SOUTH	0.	0.	0.	12.	66.	109.	139.	158.	165.	158.	139.	109.	66.	12.	0.	0.	0.	1135.	142.	208.	94.	124.
SOUTHWEST	0.	0.	0.	4.	16.	27.	56.	96.	129.	152.	162.	153.	118.	27.	0.	0.	0.	940.	128.	183.	8.	113.
WEST	0.	0.	0.	4.	16.	27.	35.	40.	42.	81.	110.	124.	110.	29.	0.	0.	0.	617.	105.	141.	7.	94.
NORTHWEST	0.	0.	0.	4.	16.	27.	35.	40.	42.	40.	35.	37.	47.	16.	0.	0.	0.	340.	85.	105.	6.	78.
NORTH	0.	0.	0.	4.	16.	27.	35.	40.	42.	40.	35.	27.	16.	4.	0.	0.	0.	287.	82.	98.	67.	75.
NORTHEAST	0.	0.	0.	16.	47.	37.	35.	40.	42.	40.	35.	27.	16.	4.	0.	0.	0.	340.	85.	105.	6.	78.
EAST	0.	0.	0.	29.	110.	124.	110.	81.	42.	40.	35.	27.	16.	4.	0.	0.	0.	617.	105.	141.	78.	94.
SOUTHEAST	0.	0.	0.	27.	118.	153.	162.	152.	129.	96.	56.	27.	16.	4.	0.	0.	0.	940.	128.	183.	8.	113.
HORIZ.	0.	0.	0.	8.	51.	93.	127.	148.	155.	148.	127.	93.	51.	8.	0.	0.	0.	1009.	133.	192.	9.	117.
MONTH 11	HO 1445.	TOD 48.	TOT 48.	KT .449	KD .185																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG ALL DAY SATGS		
SOUTH	0.	0.	0.	0.	45.	93.	124.	142.	148.	142.	124.	93.	45.	0.	0.	0.	0.	954.	124.	186.	7.	104.
SOUTHWEST	0.	0.	0.	0.	8.	20.	53.	87.	114.	132.	137.	122.	71.	0.	0.	0.	0.	744.	108.	156.	72.	91.
WEST	0.	0.	0.	0.	8.	18.	26.	31.	32.	63.	85.	90.	61.	0.	0.	0.	0.	415.	81.	108.	6.	72.
NORTHWEST	0.	0.	0.	0.	8.	18.	26.	31.	32.	31.	26.	18.	20.	0.	0.	0.	0.	210.	65.	79.	5.	60.
NORTH	0.	0.	0.	0.	8.	18.	26.	31.	32.	31.	26.	18.	8.	0.	0.	0.	0.	199.	64.	77.	5.	60.
NORTHEAST	0.	0.	0.	0.	20.	18.	26.	31.	32.	31.	26.	18.	8.	0.	0.	0.	0.	210.	65.	79.	5.	60.
EAST	0.	0.	0.	0.	61.	90.	85.	63.	32.	31.	26.	18.	8.	0.	0.	0.	0.	415.	81.	108.	61.	72.
SOUTHEAST	0.	0.	0.	0.	71.	122.	137.	132.	114.	87.	53.	20.	8.	0.	0.	0.	0.	744.	108.	156.	79.	91.
HORIZ.	0.	0.	0.	0.	22.	57.	86.	105.	111.	105.	86.	57.	22.	0.	0.	0.	0.	649.	100.	142.	6.	86.
MONTH 12	HO 1242.	TOD 39.	TOT 38.	KT .416	KD .184																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG ALL DAY SATGS		
SOUTH	0.	0.	0.	0.	29.	81.	112.	129.	135.	129.	112.	81.	29.	0.	0.	0.	0.	837.	109.	166.	6.	87.
SOUTHWEST	0.	0.	0.	0.	5.	19.	50.	79.	104.	119.	121.	104.	45.	0.	0.	0.	0.	646.	93.	137.	5.	76.
WEST	0.	0.	0.	0.	5.	15.	22.	27.	28.	55.	73.	74.	37.	0.	0.	0.	0.	336.	67.	90.	4.	58.
NORTHWEST	0.	0.	0.	0.	5.	15.	22.	27.	28.	27.	22.	15.	11.	0.	0.	0.	0.	172.	54.	65.	4.	48.
NORTH	0.	0.	0.	0.	5.	15.	22.	27.	28.	27.	22.	15.	5.	0.	0.	0.	0.	166.	53.	65.	4.	48.
NORTHEAST	0.	0.	0.	0.	11.	15.	22.	27.	28.	27.	22.	15.	5.	0.	0.	0.	0.	172.	54.	65.	4.	48.
EAST	0.	0.	0.	0.	37.	74.	73.	55.	28.	27.	22.	15.	5.	0.	0.	0.	0.	336.	67.	90.	4.	58.
SOUTHEAST	0.	0.	0.	0.	45.	104.	121.	119.	104.	79.	50.	19.	5.	0.	0.	0.	0.	646.	93.	137.	5.	76.
HORIZ.	0.	0.	0.	0.	12.	44.	70.	87.	93.	87.	70.	44.	12.	0.	0.	0.	0.	518.	83.	118.	5.	68.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	110.	108.	107.	105.	110.	116.	126.	134.	144.	142.	124.	109.	120.
SOUTHWEST	95.	103.	103.	109.	120.	128.	137.	139.	139.	128.	108.	93.	116.
WEST	71.	78.	91.	106.	122.	133.	139.	136.	124.	105.	81.	67.	105.
NORTHWEST	56.	61.	75.	93.	111.	123.	128.	120.	104.	85.	65.	54.	90.
NORTH	55.	57.	68.	82.	99.	110.	114.	107.	95.	82.	64.	53.	82.
NORTHEAST	56.	61.	75.	93.	111.	123.	128.	120.	104.	85.	65.	54.	90.
EAST	71.	78.	91.	106.	122.	133.	139.	136.	124.	105.	81.	67.	105.
SOUTHEAST	95.	97.	103.	109.	120.	128.	137.	139.	139.	128.	108.	93.	116.
HORIZ.	89.	103.	124.	145.	169.	183.	189.	180.	163.	133.	100.	83.	138.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	168.	165.	159.	145.	145.	149.	162.	177.	201.	208.	186.	166.	169.
SOUTHWEST	140.	145.	151.	154.	161.	169.	180.	187.	192.	183.	156.	137.	163.
WEST	97.	111.	130.	148.	166.	178.	185.	180.	166.	141.	108.	90.	142.
NORTHWEST	69.	80.	100.	125.	147.	161.	165.	153.	131.	105.	79.	65.	115.
NORTH	68.	74.	87.	104.	124.	138.	140.	130.	115.	98.	77.	65.	102.
NORTHEAST	69.	80.	100.	125.	147.	161.	165.	153.	131.	105.	79.	65.	115.
EAST	97.	111.	130.	148.	166.	178.	185.	180.	166.	141.	108.	90.	142.
SOUTHEAST	140.	145.	151.	154.	161.	169.	180.	187.	192.	183.	156.	137.	163.
HORIZ.	129.	156.	190.	218.	249.	266.	273.	259.	235.	192.	142.	118.	202.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	64.	67.	73.	77.	86.	95.	101.	104.	106.	94.	79.	65.	84.
SOUTHWEST	58.	62.	71.	80.	92.	102.	108.	107.	103.	88.	72.	59.	83.
WEST	49.	54.	65.	78.	93.	105.	109.	105.	96.	78.	61.	49.	79.
NORTHWEST	42.	46.	57.	71.	87.	99.	102.	97.	86.	69.	55.	44.	71.
NORTH	42.	44.	53.	65.	79.	91.	94.	90.	81.	67.	54.	44.	67.
NORTHEAST	42.	46.	57.	71.	87.	99.	102.	97.	86.	69.	55.	44.	71.
EAST	49.	54.	65.	78.	93.	105.	109.	105.	96.	78.	61.	49.	79.
SOUTHEAST	58.	62.	71.	80.	92.	102.	108.	107.	103.	88.	72.	59.	83.
HORIZ.	56.	65.	82.	100.	122.	136.	139.	130.	115.	90.	69.	55.	96.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	88.	93.	99.	100.	107.	115.	123.	128.	134.	124.	104.	87.	108.
SOUTHWEST	77.	84.	95.	104.	117.	127.	134.	134.	130.	113.	91.	76.	107.
WEST	59.	68.	85.	101.	120.	133.	137.	130.	117.	94.	72.	58.	98.
NORTHWEST	48.	55.	70.	88.	108.	122.	124.	115.	99.	78.	60.	48.	85.
NORTH	47.	52.	63.	77.	95.	108.	110.	102.	91.	75.	60.	48.	77.
NORTHEAST	48.	55.	70.	88.	108.	122.	124.	115.	99.	78.	60.	48.	85.
EAST	59.	68.	85.	101.	120.	133.	137.	130.	117.	94.	72.	58.	98.
SOUTHEAST	77.	84.	95.	104.	117.	127.	134.	134.	130.	113.	91.	76.	107.
HORIZ.	72.	89.	115.	140.	169.	187.	190.	174.	151.	117.	86.	68.	130.

LOCATION SEATTLE, WASHINGTON LATITUDE 47 DEGREES 26 MINUTES

MONTH	1	HO	1019.	TOD	42.	TOT	39.	KT	.296	KD	.179	DAILY TOTAL RADIATION										SAG/DAYTIME SATS		ALL DAY SATS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20								
SOUTH	0.	0.	0.	0.	10.	42.	62.	74.	78.	74.	62.	42.	10.	0.	0.	0.	0.	452.	81.	113.	5.	65.			
SOUTHWEST	0.	0.	0.	0.	3.	12.	30.	48.	61.	68.	67.	53.	14.	0.	0.	0.	0.	357.	73.	98.	5.	60.			
WEST	0.	0.	0.	0.	3.	11.	16.	20.	21.	35.	42.	39.	12.	0.	0.	0.	0.	200.	59.	73.	4.	51.			
NORTHWEST	0.	0.	0.	0.	3.	11.	16.	20.	21.	20.	16.	11.	5.	0.	0.	0.	0.	124.	53.	62.	4.	46.			
NORTH	0.	0.	0.	0.	3.	11.	16.	20.	21.	20.	16.	11.	3.	0.	0.	0.	0.	122.	53.	61.	4.	46.			
NORTHEAST	0.	0.	0.	0.	5.	11.	16.	20.	21.	20.	16.	11.	3.	0.	0.	0.	0.	124.	53.	62.	4.	46.			
EAST	0.	0.	0.	0.	12.	39.	42.	35.	21.	20.	16.	11.	3.	0.	0.	0.	0.	200.	59.	73.	4.	51.			
SOUTHEAST	0.	0.	0.	0.	14.	53.	67.	68.	61.	48.	30.	12.	3.	0.	0.	0.	0.	357.	73.	98.	5.	60.			
HORIZ.	0.	0.	0.	0.	6.	25.	41.	51.	55.	51.	41.	25.	6.	0.	0.	0.	0.	302.	68.	90.	4.	57.			

MONTH	2	HO	1614.	TOD	45.	TOT	42.	KT	.355	KD	.181											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
																			SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	3.	38.	66.	87.	100.	105.	100.	87.	66.	38.	3.	0.	0.	0.	695.	96.	138.	65.	83.
SOUTHWEST	0.	0.	0.	2.	11.	19.	40.	64.	83.	95.	98.	89.	63.	4.	0.	0.	0.	570.	87.	121.	61.	76.
WEST	0.	0.	0.	2.	11.	19.	25.	29.	31.	51.	66.	71.	58.	4.	0.	0.	0.	368.	72.	94.	54.	64.
NORTHWEST	0.	0.	0.	2.	11.	19.	25.	29.	31.	29.	25.	22.	25.	3.	0.	0.	0.	222.	61.	75.	50.	55.
NORTH	0.	0.	0.	2.	11.	19.	25.	29.	31.	29.	25.	19.	11.	2.	0.	0.	0.	204.	60.	72.	49.	54.
NORTHEAST	0.	0.	0.	3.	25.	22.	25.	29.	31.	29.	25.	19.	11.	2.	0.	0.	0.	222.	61.	75.	50.	55.
EAST	0.	0.	0.	4.	58.	71.	66.	51.	31.	29.	25.	19.	11.	2.	0.	0.	0.	368.	72.	94.	54.	64.
SOUTHEAST	0.	0.	0.	4.	63.	89.	98.	95.	83.	64.	40.	19.	11.	2.	0.	0.	0.	570.	87.	121.	61.	76.
HORIZ.	0.	0.	0.	3.	27.	53.	73.	86.	90.	86.	73.	53.	27.	3.	0.	0.	0.	573.	87.	122.	61.	76.

MONTH	3	HO	2320.	TOD	49.	TOT	46.	KT	.456	KD	.186	DAILY TOTAL		SAG/DAYTIME		SAG/ALL DAY						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	RADIATION	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	23.	59.	92.	118.	134.	140.	134.	118.	92.	59.	23.	0.	0.	0.	993.	112.	164.	78.	104.
SOUTHWEST	0.	0.	0.	10.	21.	30.	49.	83.	111.	131.	139.	134.	112.	67.	0.	0.	0.	888.	106.	152.	75.	98.
WEST	0.	0.	0.	10.	21.	30.	37.	41.	43.	75.	101.	115.	112.	78.	0.	0.	0.	662.	91.	126.	67.	85.
NORTHWEST	0.	0.	0.	10.	21.	30.	37.	41.	43.	41.	37.	46.	58.	49.	0.	0.	0.	412.	75.	97.	59.	70.
NORTH	0.	0.	0.	10.	21.	30.	37.	41.	43.	41.	37.	30.	21.	10.	0.	0.	0.	320.	69.	86.	56.	65.
NORTHEAST	0.	0.	0.	49.	58.	46.	37.	41.	43.	41.	37.	30.	21.	10.	0.	0.	0.	412.	75.	97.	59.	70.
EAST	0.	0.	0.	78.	115.	101.	75.	43.	41.	37.	30.	21.	10.	0.	0.	0.	0.	662.	91.	126.	67.	85.
SOUTHEAST	0.	0.	0.	67.	112.	134.	139.	131.	111.	83.	49.	30.	21.	10.	0.	0.	0.	888.	106.	152.	75.	98.
HORIZ.	0.	0.	0.	27.	64.	98.	124.	141.	146.	141.	124.	98.	64.	27.	0.	0.	0.	1056.	116.	171.	80.	108.

LOCATION SEATTLE, WASHINGTON LATITUDE 47 DEGREES 26 MINUTES

MONTH	4	HO	3063.	TOD	54.	TOT	51.	KT	.510	KD	.187						
HOURLY SOLAR RADIATION																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	8.	25.	60.	93.	120.	137.	143.	137.	120.	93.	60.	25.	8.	0.	0.
SOUTHWEST	0.	0.	8.	19.	30.	39.	46.	84.	116.	140.	151.	148.	131.	98.	44.	0.	0.
WEST	0.	0.	8.	19.	30.	39.	46.	51.	52.	90.	121.	140.	143.	125.	67.	0.	0.
NORTHWEST	0.	0.	8.	19.	30.	39.	46.	51.	52.	51.	47.	72.	89.	90.	55.	0.	0.
NORTH	0.	0.	17.	19.	30.	39.	46.	51.	52.	51.	46.	39.	30.	19.	17.	0.	0.
NORTHEAST	0.	0.	55.	90.	89.	72.	47.	51.	52.	51.	46.	39.	30.	19.	8.	0.	0.
EAST	0.	0.	67.	125.	143.	140.	121.	90.	52.	51.	46.	39.	30.	19.	8.	0.	0.
SOUTHEAST	0.	0.	44.	98.	131.	148.	151.	140.	116.	84.	46.	39.	30.	19.	8.	0.	0.
HORIZ.	0.	0.	21.	62.	104.	141.	169.	187.	193.	187.	169.	141.	104.	62.	21.	0.	0.
DAILY TOTAL RADIATION												1028.	112.	158.	84.	111.	
SAG/DAYTIME SAT6S												1055.	113.	161.	85.	112.	
SAG/ALL DAY SAT6S												932.	106.	149.	81.	105.	
SAG/DAYTIME SAT6S												652.	91.	120.	72.	89.	
SAG/ALL DAY SAT6S												458.	80.	101.	66.	78.	
SAG/DAYTIME SAT6S												652.	91.	120.	72.	89.	
SAG/ALL DAY SAT6S												932.	106.	149.	81.	105.	
SAG/DAYTIME SAT6S												1055.	113.	161.	85.	112.	
SAG/ALL DAY SAT6S												1562.	141.	213.	101.	142.	

MONTH	5	HO	3570.	TOD	60.	TOT	56.	KT	.538	KD	.183						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	4.	14.	25.	52.	85.	111.	128.	134.	128.	111.	85.	52.	25.	14.	4.	0.
SOUTHWEST	0.	4.	14.	25.	36.	44.	51.	78.	112.	136.	149.	148.	133.	105.	63.	13.	0.
WEST	0.	4.	14.	25.	36.	44.	51.	55.	57.	96.	129.	150.	157.	145.	106.	26.	0.
NORTHWEST	0.	4.	14.	25.	36.	44.	51.	55.	57.	55.	63.	90.	110.	115.	95.	27.	0.
NORTH	0.	14.	37.	33.	36.	44.	51.	55.	57.	55.	51.	44.	36.	33.	37.	14.	0.
NORTHEAST	0.	27.	95.	115.	110.	90.	63.	55.	57.	55.	51.	44.	36.	25.	14.	4.	0.
EAST	0.	26.	106.	145.	157.	150.	129.	96.	57.	55.	51.	44.	36.	25.	14.	4.	0.
SOUTHEAST	0.	13.	63.	105.	133.	148.	149.	136.	112.	78.	51.	44.	36.	25.	14.	4.	0.
HORIZ.	0.	9.	45.	88.	130.	167.	196.	214.	220.	214.	196.	167.	130.	88.	45.	9.	0.
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MONTH	6	HO	3761.	TOD	64.	TOT	61.	KT	.508	KD	.187										
ORIENTATION	4	5	6	7	8	9	HOURLY SOLAR RADIATION								DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY			
							10	11	12	13	14	15	16	17		18	19	20	SAT6S	SAT6D	SAT6S
SOUTH	0.	7.	17.	27.	46.	76.	99.	114.	120.	114.	99.	76.	46.	27.	17.	7.	0.	111.	147.	92.	115.
SOUTHWEST	0.	7.	17.	27.	37.	46.	52.	72.	102.	123.	134.	133.	120.	95.	60.	20.	0.	119.	160.	97.	124.
WEST	0.	7.	17.	27.	37.	46.	52.	56.	58.	92.	120.	139.	145.	135.	104.	43.	0.	121.	164.	98.	126.
NORTHWEST	0.	7.	17.	27.	37.	46.	52.	56.	58.	56.	67.	90.	107.	111.	96.	45.	0.	110.	145.	91.	114.
NORTH	0.	25.	42.	39.	37.	46.	52.	56.	58.	56.	52.	46.	37.	39.	42.	25.	0.	98.	124.	84.	101.
NORTHEAST	0.	45.	96.	111.	107.	90.	67.	56.	58.	56.	52.	46.	37.	27.	17.	7.	0.	110.	145.	91.	114.
EAST	0.	43.	104.	135.	145.	139.	120.	92.	58.	56.	52.	46.	37.	27.	17.	7.	0.	1078.	121.	164.	98.
SOUTHEAST	0.	20.	60.	95.	120.	133.	134.	123.	102.	72.	52.	46.	37.	27.	17.	7.	0.	119.	160.	97.	124.
HORIZ.	0.	16.	51.	91.	130.	164.	190.	207.	212.	207.	190.	164.	130.	91.	51.	16.	0.	1910.	240.	127.	177.
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LOCATION SEATTLE, WASHINGTON LATITUDE 47 DEGREES 26 MINUTES

MONTH	7	HO	3570.	TOD	68.	TOT	65.	KT	581	KD	.177						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	4.	14.	25.	54.	90.	120.	139.	145.	139.	120.	90.	54.	25.	14.	4.	0.
SOUTHWEST	0.	4.	14.	25.	36.	45.	52.	82.	119.	147.	162.	162.	146.	114.	68.	14.	0.
WEST	0.	4.	14.	25.	36.	45.	52.	56.	58.	103.	140.	165.	173.	160.	116.	28.	0.
NORTHWEST	0.	4.	14.	25.	36.	45.	52.	56.	58.	56.	66.	97.	120.	127.	105.	29.	0.
NORTH	0.	15.	40.	34.	36.	45.	52.	56.	58.	56.	52.	45.	36.	34.	40.	15.	0.
NORTHEAST	0.	29.	105.	127.	120.	97.	66.	56.	58.	56.	52.	45.	36.	25.	14.	4.	0.
EAST	0.	28.	116.	160.	173.	165.	140.	103.	58.	56.	52.	45.	36.	25.	14.	4.	0.
SOUTHEAST	0.	14.	68.	114.	146.	162.	162.	147.	119.	82.	52.	45.	36.	25.	14.	4.	0.
HORIZ.	0.	10.	47.	94.	141.	181.	212.	232.	239.	232.	212.	181.	141.	94.	47.	10.	0.
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MONTH	8	HO	3043.	TOD	68.	TOT	65.	KT	533	KD	.183						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	8.	24.	61.	97.	125.	144.	150.	144.	125.	97.	61.	24.	8.	0.	0.
SOUTHWEST	0.	0.	8.	19.	30.	39.	46.	87.	121.	146.	159.	156.	137.	100.	43.	0.	0.
WEST	0.	0.	8.	19.	30.	39.	46.	51.	53.	93.	126.	147.	150.	129.	65.	0.	0.
NORTHWEST	0.	0.	8.	19.	30.	39.	46.	51.	53.	51.	47.	75.	93.	93.	54.	0.	0.
NORTH	0.	0.	16.	19.	30.	39.	46.	51.	53.	51.	46.	39.	30.	19.	16.	0.	0.
NORTHEAST	0.	0.	54.	93.	93.	75.	47.	51.	53.	51.	46.	39.	30.	19.	8.	0.	0.
EAST	0.	0.	65.	129.	150.	147.	126.	93.	53.	51.	46.	39.	30.	19.	8.	0.	0.
SOUTHEAST	0.	0.	43.	100.	137.	156.	159.	146.	121.	87.	46.	39.	30.	19.	8.	0.	0.
HORIZ.	0.	0.	21.	63.	107.	146.	176.	195.	202.	195.	176.	146.	107.	63.	21.	0.	0.

MONTH	9	HO	2313.	TOD	63.	TOT	60.	KT	.492	KD	.188						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	24.	63.	99.	128.	147.	153.	147.	128.	99.	63.	24.	0.	0.	0.
SOUTHWEST	0.	0.	0.	10.	21.	31.	51.	89.	121.	143.	152.	146.	122.	70.	0.	0.	0.
WEST	0.	0.	0.	10.	21.	31.	38.	42.	44.	81.	110.	125.	121.	81.	0.	0.	0.
NORTHWEST	0.	0.	0.	10.	21.	31.	38.	42.	44.	42.	38.	49.	62.	51.	0.	0.	0.
NORTH	0.	0.	0.	10.	21.	31.	38.	42.	44.	42.	38.	31.	21.	10.	0.	0.	0.
NORTHEAST	0.	0.	0.	51.	62.	49.	38.	42.	44.	42.	38.	31.	21.	10.	0.	0.	0.
EAST	0.	0.	0.	81.	121.	125.	110.	81.	44.	42.	38.	31.	21.	10.	0.	0.	0.
SOUTHEAST	0.	0.	0.	70.	122.	146.	152.	143.	121.	89.	51.	31.	21.	10.	0.	0.	0.
HORIZ.	0.	0.	1.	29.	69.	105.	134.	152.	158.	152.	134.	105.	69.	29.	1.	0.	0.
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LOCATION		SEATTLE, WASHINGTON		LATITUDE 47 DEGREES 26 MINUTES														
MONTH 10		HO 1582.	TOD	56.	TOT	53.	KT	.407	KD	.183								
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	2.	44.	80.	106.	122.	128.	122.	106.	80.	44.	2.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	2.	11.	19.	46.	75.	100.	115.	120.	109.	74.	3.	0.	0.	0.
WEST	0.	0.	0.	0.	2.	11.	19.	26.	30.	32.	59.	78.	85.	68.	3.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	2.	11.	19.	26.	30.	32.	30.	26.	23.	28.	2.	0.	0.	0.
NORTH	0.	0.	0.	0.	2.	11.	19.	26.	30.	32.	30.	26.	19.	11.	2.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	2.	28.	23.	26.	30.	32.	30.	26.	19.	11.	2.	0.	0.	0.
EAST	0.	0.	0.	0.	3.	68.	85.	78.	59.	32.	30.	26.	19.	11.	2.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	3.	74.	109.	120.	115.	100.	75.	46.	19.	11.	2.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	3.	29.	59.	82.	97.	103.	97.	82.	59.	29.	3.	0.	0.	0.
		DAILY TOTAL RADIATION																
		SAG/DAYTIME SATGS SATGD																
		SAG/ALL DAY SATGD																
		102.																
		80.																
		169.																
		118.																
		106.																
		147.																
		74.																
		87.																
		112.																
		66.																
		73.																
		87.																
		73.																
		72.																
		84.																
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		87.																
		106.																
		147.																
		74.																
		92.																
		104.																
		143.																
		73.																
		90.																
MONTH 11		HO 1009.	TOD	48.	TOT	45.	KT	.336	KD	.180								
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	0.	11.	52.	77.	92.	97.	92.	77.	52.	11.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	0.	3.	13.	35.	58.	75.	85.	84.	66.	16.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	0.	3.	11.	17.	21.	22.	40.	51.	48.	14.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	0.	3.	11.	17.	21.	22.	21.	17.	11.	5.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	0.	3.	11.	17.	21.	22.	21.	17.	11.	3.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	0.	5.	11.	17.	21.	22.	21.	17.	11.	3.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	0.	14.	48.	51.	40.	22.	21.	17.	11.	3.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	0.	16.	66.	84.	85.	75.	58.	35.	13.	3.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	0.	6.	27.	46.	58.	63.	58.	46.	27.	6.	0.	0.	0.	0.
		DAILY TOTAL RADIATION																
		SAG/DAYTIME SATGS SATGD																
		SAG/ALL DAY SATGD																
		78.																
		63.																
		137.																
		97.																
		86.																
		117.																
		59.																
		71.																
		68.																
		84.																
		53.																
		59.																
		68.																
		49.																
		53.																
		125.																
		59.																
		68.																
		49.																
		53.																
		128.																
		227.																
		59.																
		84.																
		53.																
		227.																
		435.																
		86.																
		117.																
		59.																
		71.																
		78.																
		102.																
		56.																
		65.																
MONTH 12		HO 804.	TOD	44.	TOT	42.	KT	.292	KD	.179								
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	0.	1.	34.	58.	71.	75.	71.	58.	34.	1.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	0.	1.	10.	28.	45.	58.	65.	61.	42.	1.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	0.	1.	8.	13.	17.	18.	31.	37.	30.	1.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	0.	1.	8.	13.	17.	18.	17.	13.	8.	1.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	0.	1.	8.	13.	17.	18.	17.	13.	8.	1.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	0.	1.	8.	13.	17.	18.	17.	13.	8.	1.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	0.	1.	30.	37.	31.	18.	17.	13.	8.	1.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	0.	1.	42.	61.	65.	58.	45.	28.	10.	1.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	0.	1.	17.	33.	43.	46.	43.	33.	17.	1.	0.	0.	0.	0.
		DAILY TOTAL RADIATION																
		SAG/DAYTIME SATGS SATGD																
		SAG/ALL DAY SATGD																
		65.																
		55.																
		82.																
		112.																
		82.																
		73.																
		97.																
		52.																
		60.																
		59.																
		71.																
		47.																
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		50.																
		52.																
		60.																
		73.																
		97.																
		74.																
		52.																
		49.																
		55.																

LOCATION SEATTLE, WASHINGTON LATITUDE 47 DEGREES 26 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	81.	96.	112.	112.	113.	111.	125.	132.	136.	118.	97.	82.	110.
SOUTHWEST	73.	87.	106.	113.	120.	119.	133.	133.	128.	106.	86.	73.	106.
WEST	59.	72.	91.	106.	119.	121.	132.	125.	111.	87.	68.	59.	96.
NORTHWEST	53.	61.	75.	91.	106.	110.	116.	107.	92.	73.	59.	53.	83.
NORTH	53.	60.	69.	80.	92.	98.	102.	95.	86.	72.	59.	53.	77.
NORTHEAST	53.	61.	75.	91.	106.	110.	116.	107.	92.	73.	59.	53.	83.
EAST	59.	72.	91.	106.	119.	121.	132.	125.	111.	87.	68.	59.	96.
SOUTHEAST	73.	87.	106.	113.	120.	119.	133.	133.	128.	106.	86.	73.	106.
HORIZ.	68.	87.	116.	141.	164.	164.	180.	164.	140.	104.	78.	66.	123.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	113.	138.	164.	158.	153.	147.	168.	180.	192.	169.	137.	112.	153.
SOUTHWEST	98.	121.	152.	161.	166.	160.	182.	183.	178.	147.	117.	97.	147.
WEST	73.	94.	126.	149.	165.	164.	181.	169.	148.	112.	84.	71.	128.
NORTHWEST	62.	75.	97.	120.	141.	145.	153.	137.	115.	87.	68.	61.	105.
NORTH	61.	72.	86.	101.	117.	124.	127.	116.	103.	84.	68.	61.	93.
NORTHEAST	62.	75.	97.	120.	141.	145.	153.	137.	115.	87.	68.	61.	105.
EAST	73.	94.	126.	149.	165.	164.	181.	169.	148.	112.	84.	71.	128.
SOUTHEAST	98.	121.	152.	161.	166.	160.	182.	183.	178.	147.	117.	97.	147.
HORIZ.	90.	122.	171.	213.	244.	240.	266.	238.	200.	143.	102.	84.	176.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	53.	65.	78.	84.	90.	92.	101.	101.	97.	80.	63.	55.	80.
SOUTHWEST	50.	61.	75.	85.	95.	97.	106.	102.	93.	74.	59.	52.	79.
WEST	45.	54.	67.	81.	94.	98.	105.	97.	84.	66.	53.	47.	74.
NORTHWEST	43.	50.	59.	72.	85.	91.	96.	87.	75.	60.	49.	45.	68.
NORTH	43.	49.	56.	66.	77.	84.	86.	80.	71.	60.	49.	45.	64.
NORTHEAST	43.	50.	59.	72.	85.	91.	96.	87.	75.	60.	49.	45.	68.
EAST	45.	54.	67.	81.	94.	98.	105.	97.	84.	66.	53.	47.	74.
SOUTHEAST	50.	61.	75.	85.	95.	97.	106.	102.	93.	74.	59.	52.	79.
HORIZ.	49.	61.	80.	101.	122.	127.	136.	120.	99.	73.	56.	49.	89.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	65.	83.	104.	111.	116.	115.	128.	129.	125.	102.	78.	65.	102.
SOUTHWEST	60.	76.	98.	112.	124.	124.	137.	131.	118.	92.	71.	60.	100.
WEST	51.	64.	85.	105.	123.	126.	136.	123.	102.	77.	59.	51.	92.
NORTHWEST	46.	55.	70.	89.	108.	114.	119.	105.	86.	66.	53.	47.	80.
NORTH	46.	54.	65.	78.	93.	101.	102.	92.	80.	65.	53.	47.	73.
NORTHEAST	46.	55.	70.	89.	108.	114.	119.	105.	86.	66.	53.	47.	80.
EAST	51.	64.	85.	105.	123.	126.	136.	123.	102.	77.	59.	51.	92.
SOUTHEAST	60.	76.	98.	112.	124.	124.	137.	131.	118.	92.	71.	60.	100.
HORIZ.	57.	76.	108.	142.	173.	177.	191.	163.	128.	90.	65.	55.	119.

LOCATION		SEATTLE, WASHINGTON				LATITUDE 47 DEGREES 36 MINUTES															
MONTH 1	HO 1011.	TOD 39.	TOT 37.	KT .266	KD .179																
ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	0.	8.	33.	50.	59.	62.	59.	50.	33.	8.	0.	0.	0.	0.	363.	70.	96.	58.	
SOUTHWEST	0.	0.	0.	3.	12.	26.	40.	50.	55.	53.	42.	11.	0.	0.	0.	0.	292.	64.	85.	54.	
WEST	0.	0.	0.	3.	10.	16.	19.	20.	30.	35.	32.	10.	0.	0.	0.	0.	176.	54.	67.	47.	
NORTHWEST	0.	0.	0.	3.	10.	16.	19.	20.	19.	16.	10.	5.	0.	0.	0.	0.	119.	49.	58.	41.	
NORTH	0.	0.	0.	3.	10.	16.	19.	20.	19.	16.	10.	3.	0.	0.	0.	0.	118.	49.	57.	44.	
NORTHEAST	0.	0.	0.	5.	10.	16.	19.	20.	19.	16.	10.	3.	0.	0.	0.	0.	119.	49.	58.	41.	
EAST	0.	0.	0.	10.	32.	35.	30.	20.	19.	16.	10.	3.	0.	0.	0.	0.	176.	54.	67.	47.	
SOUTHEAST	0.	0.	0.	11.	42.	53.	55.	50.	40.	26.	12.	3.	0.	0.	0.	0.	292.	64.	85.	54.	
HORIZ.	0.	0.	0.	6.	22.	37.	46.	49.	46.	37.	22.	6.	0.	0.	0.	0.	270.	62.	81.	53.	
MONTH 2	HO 1606.	TOD 43.	TOT 41.	KT .324	KD .180																
ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	2.	33.	58.	76.	87.	91.	87.	76.	58.	33.	2.	0.	0.	0.	604.	87.	124.	76.	
SOUTHWEST	0.	0.	2.	11.	18.	37.	57.	73.	83.	85.	77.	54.	4.	0.	0.	0.	500.	80.	110.	70.	
WEST	0.	0.	2.	11.	18.	24.	28.	30.	47.	58.	61.	50.	4.	0.	0.	0.	333.	67.	87.	52.	
NORTHWEST	0.	0.	2.	11.	18.	24.	28.	30.	28.	24.	21.	22.	3.	0.	0.	0.	212.	59.	71.	48.	
NORTH	0.	0.	2.	11.	18.	24.	28.	30.	28.	24.	18.	11.	2.	0.	0.	0.	197.	57.	69.	47.	
NORTHEAST	0.	0.	3.	22.	21.	24.	28.	30.	28.	24.	18.	11.	2.	0.	0.	0.	212.	59.	71.	48.	
EAST	0.	0.	4.	50.	61.	58.	47.	30.	28.	24.	18.	11.	2.	0.	0.	0.	333.	67.	87.	52.	
SOUTHEAST	0.	0.	4.	54.	77.	85.	83.	73.	57.	37.	18.	11.	2.	0.	0.	0.	500.	80.	110.	70.	
HORIZ.	0.	0.	3.	25.	48.	66.	77.	81.	77.	66.	48.	25.	3.	0.	0.	0.	520.	81.	113.	71.	
MONTH 3	HO 2313.	TOD 47.	TOT 44.	KT .423	KD .184																
ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
SOUTH	0.	0.	21.	54.	84.	107.	122.	127.	122.	107.	84.	54.	21.	0.	0.	0.	906.	105.	152.	97.	
SOUTHWEST	0.	0.	10.	20.	29.	46.	77.	102.	119.	126.	121.	101.	69.	0.	0.	0.	812.	99.	141.	71.	
WEST	0.	0.	10.	20.	29.	36.	40.	41.	70.	92.	104.	101.	60.	0.	0.	0.	612.	86.	118.	64.	
NORTHWEST	0.	0.	10.	20.	29.	36.	40.	41.	40.	36.	43.	53.	44.	0.	0.	0.	391.	72.	92.	57.	
NORTH	0.	0.	10.	20.	29.	36.	40.	41.	40.	36.	29.	20.	10.	0.	0.	0.	310.	67.	83.	54.	
NORTHEAST	0.	0.	44.	53.	43.	36.	40.	41.	40.	36.	29.	20.	10.	0.	0.	0.	391.	72.	92.	63.	
EAST	0.	0.	69.	101.	104.	92.	70.	41.	40.	36.	29.	20.	10.	0.	0.	0.	612.	86.	118.	64.	
SOUTHEAST	0.	0.	60.	101.	121.	126.	119.	102.	77.	46.	29.	20.	10.	0.	0.	0.	812.	99.	141.	71.	
HORIZ.	0.	0.	26.	60.	91.	115.	130.	135.	130.	115.	91.	60.	26.	0.	0.	0.	977.	109.	160.	101.	



LOCATION SEATTLE, WASHINGTON LATITUDE 47 DEGREES 36 MINUTES

MONTH	4	HO	3059.	TOD	52.	TOT	49.	KT	.468	KD	.186						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	8.	24.	55.	85.	109.	124.	130.	124.	109.	85.	55.	24.	8.	0.	0.
SOUTHWEST	0.	0.	8.	19.	29.	38.	45.	78.	107.	127.	136.	133.	117.	87.	39.	0.	0.
WEST	0.	0.	8.	19.	29.	38.	45.	49.	51.	83.	109.	126.	128.	111.	59.	0.	0.
NORTHWEST	0.	0.	8.	19.	29.	38.	45.	49.	51.	49.	45.	67.	81.	81.	49.	0.	0.
NORTH	0.	0.	16.	19.	29.	38.	45.	49.	51.	49.	45.	38.	29.	19.	16.	0.	0.
NORTHEAST	0.	0.	49.	81.	81.	67.	45.	49.	51.	49.	45.	38.	29.	19.	8.	0.	0.
EAST	0.	0.	59.	111.	128.	126.	109.	83.	51.	49.	45.	38.	29.	19.	8.	0.	0.
SOUTHEAST	0.	0.	39.	87.	117.	133.	136.	127.	107.	78.	45.	38.	29.	19.	8.	0.	0.
HORIZ.	0.	0.	20.	58.	96.	129.	155.	171.	176.	171.	155.	129.	96.	58.	20.	0.	0.

MONTH	5	HO	3568.	TOD	58.	TOT	55.	KT	.477	KD	.187						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	5.	14.	25.	48.	76.	99.	114.	119.	114.	99.	76.	48.	25.	14.	5.	0.
SOUTHWEST	0.	5.	14.	25.	35.	43.	50.	72.	100.	120.	129.	128.	115.	90.	54.	12.	0.
WEST	0.	5.	14.	25.	35.	43.	50.	54.	55.	87.	113.	129.	134.	122.	89.	23.	0.
NORTHWEST	0.	5.	14.	25.	35.	43.	50.	54.	55.	54.	59.	80.	95.	98.	81.	24.	0.
NORTH	0.	13.	33.	31.	35.	43.	50.	54.	55.	54.	50.	43.	35.	31.	33.	13.	0.
NORTHEAST	0.	24.	81.	98.	95.	80.	59.	54.	55.	54.	50.	43.	35.	25.	14.	5.	0.
EAST	0.	23.	89.	122.	134.	129.	113.	87.	55.	54.	50.	43.	35.	25.	14.	5.	0.
SOUTHEAST	0.	12.	54.	90.	115.	128.	129.	120.	100.	72.	50.	43.	35.	25.	14.	5.	0.
HORIZ.	0.	9.	41.	79.	116.	148.	173.	189.	194.	189.	173.	148.	116.	79.	41.	9.	0.

MONTH	6	HO	3760.	TOD	63.	TOT	60.	KT	.459	KD	.186						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	7.	16.	26.	44.	70.	90.	104.	108.	104.	90.	70.	44.	26.	16.	7.	0.
SOUTHWEST	0.	7.	16.	26.	36.	44.	50.	68.	93.	111.	120.	118.	106.	84.	53.	18.	0.
WEST	0.	7.	16.	26.	36.	44.	50.	54.	55.	85.	108.	123.	127.	118.	90.	38.	0.
NORTHWEST	0.	7.	16.	26.	36.	44.	50.	54.	55.	54.	63.	82.	95.	98.	84.	40.	0.
NORTH	0.	22.	38.	36.	36.	44.	50.	54.	55.	54.	50.	44.	36.	36.	38.	22.	0.
NORTHEAST	0.	40.	84.	98.	95.	82.	63.	54.	55.	54.	50.	44.	36.	26.	16.	7.	0.
EAST	0.	38.	90.	118.	127.	123.	108.	85.	55.	54.	50.	44.	36.	26.	16.	7.	0.
SOUTHEAST	0.	18.	53.	84.	106.	118.	120.	111.	93.	68.	50.	44.	36.	26.	16.	7.	0.
HORIZ.	0.	15.	47.	83.	118.	148.	171.	186.	191.	186.	171.	148.	118.	83.	47.	15.	0.

LOCATION	SEATTLE, WASHINGTON				LATITUDE 47 DEGREES 36 MINUTES																	
MONTH	7	HO	3569.	TOD	67.	TOT	64.	KT	.498	KD	.188											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD
SOUTH	0.	5.	15.	25.	50.	79.	103.	118.	124.	118.	103.	79.	50.	25.	15.	5.	0.	912.	116.	154.	95.	119.
SOUTHWEST	0.	5.	15.	25.	35.	44.	50.	74.	104.	125.	135.	134.	120.	94.	56.	12.	0.	1028.	123.	165.	99.	126.
WEST	0.	5.	15.	25.	35.	44.	50.	55.	56.	90.	118.	136.	141.	128.	93.	24.	0.	1014.	122.	164.	99.	125.
NORTHWEST	0.	5.	15.	25.	35.	44.	50.	55.	56.	55.	61.	84.	100.	103.	84.	24.	0.	795.	110.	143.	91.	112.
NORTH	0.	13.	34.	32.	35.	44.	50.	55.	56.	55.	50.	44.	35.	32.	34.	13.	0.	583.	99.	123.	84.	99.
NORTHEAST	0.	24.	84.	103.	100.	84.	61.	55.	56.	55.	50.	44.	35.	25.	15.	5.	0.	795.	110.	143.	91.	112.
EAST	0.	24.	93.	128.	141.	136.	118.	90.	56.	55.	50.	44.	35.	25.	15.	5.	0.	1014.	122.	164.	99.	125.
SOUTHEAST	0.	12.	56.	94.	120.	134.	135.	125.	104.	74.	50.	44.	35.	25.	15.	5.	0.	1028.	123.	165.	99.	126.
HORIZ.	0.	10.	42.	82.	121.	155.	181.	197.	203.	197.	181.	155.	121.	82.	42.	10.	0.	1778.	163.	237.	125.	171.
MONTH	8	HO	3039.	TOD	67.	TOT	64.	KT	.511	KD	.186											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD
SOUTH	0.	0.	8.	24.	59.	93.	120.	137.	143.	137.	120.	93.	59.	24.	8.	0.	0.	1024.	128.	174.	99.	125.
SOUTHWEST	0.	0.	8.	19.	30.	39.	46.	84.	116.	139.	151.	148.	130.	95.	40.	0.	0.	1045.	129.	176.	99.	127.
WEST	0.	0.	8.	19.	30.	39.	46.	51.	52.	90.	120.	139.	142.	121.	61.	0.	0.	919.	121.	163.	95.	119.
NORTHWEST	0.	0.	8.	19.	30.	39.	46.	51.	52.	51.	47.	72.	88.	88.	51.	0.	0.	641.	105.	134.	86.	102.
NORTH	0.	0.	16.	19.	30.	39.	46.	51.	52.	51.	46.	39.	30.	19.	16.	0.	0.	453.	94.	114.	79.	91.
NORTHEAST	0.	0.	51.	88.	88.	72.	47.	51.	52.	51.	46.	39.	30.	19.	8.	0.	0.	641.	105.	134.	86.	102.
EAST	0.	0.	61.	121.	142.	139.	120.	90.	52.	51.	46.	39.	30.	19.	8.	0.	0.	919.	121.	163.	95.	119.
SOUTHEAST	0.	0.	40.	95.	130.	148.	151.	139.	116.	84.	46.	39.	30.	19.	8.	0.	0.	1045.	129.	176.	99.	127.
HORIZ.	0.	0.	21.	61.	103.	140.	169.	187.	193.	187.	169.	140.	103.	61.	21.	0.	0.	1553.	159.	230.	117.	157.
MONTH	9	HO	2307.	TOD	62.	TOT	59.	KT	.459	KD	.186											
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS	SATGD
SOUTH	0.	0.	0.	22.	58.	92.	118.	135.	140.	135.	118.	92.	58.	22.	0.	0.	0.	990.	129.	180.	93.	119.
SOUTHWEST	0.	0.	0.	10.	21.	30.	49.	83.	112.	132.	140.	134.	111.	64.	0.	0.	0.	883.	122.	168.	89.	112.
WEST	0.	0.	0.	10.	21.	30.	37.	41.	43.	75.	101.	115.	110.	74.	0.	0.	0.	656.	106.	140.	81.	98.
NORTHWEST	0.	0.	0.	10.	21.	30.	37.	41.	43.	41.	37.	46.	58.	46.	0.	0.	0.	409.	89.	111.	73.	83.
NORTH	0.	0.	0.	10.	21.	30.	37.	41.	43.	41.	37.	30.	21.	10.	0.	0.	0.	319.	83.	100.	70.	78.
NORTHEAST	0.	0.	0.	46.	58.	46.	37.	41.	43.	41.	37.	30.	21.	10.	0.	0.	0.	409.	89.	111.	73.	83.
EAST	0.	0.	74.	110.	115.	101.	75.	43.	41.	37.	30.	30.	21.	10.	0.	0.	0.	656.	106.	140.	81.	98.
SOUTHEAST	0.	0.	0.	64.	111.	134.	140.	132.	112.	83.	49.	30.	21.	10.	0.	0.	0.	883.	122.	168.	89.	112.
HORIZ.	0.	0.	1.	27.	64.	98.	124.	141.	147.	141.	124.	98.	64.	27.	1.	0.	0.	1058.	133.	188.	95.	123.

LOCATION		SEATTLE, WASHINGTON		LATITUDE		47 DEGREES		36 MINUTES																
MONTH	10	HO	1574.	TOD	54.	TOT	52.	KT	.372	KD	.182													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH		0.	0.	0.	0.	2.	38.	70.	93.	108.	112.	108.	93.	70.	38.	2.	0.	0.	735.	108.	153.	75.	95.	
SOUTHWEST		0.	0.	0.	0.	2.	11.	19.	42.	68.	88.	102.	105.	94.	64.	3.	0.	0.	597.	94.	134.	71.	86.	
WEST		0.	0.	0.	0.	2.	11.	19.	25.	29.	31.	53.	70.	75.	59.	3.	0.	0.	375.	82.	104.	64.	74.	
NORTHWEST		0.	0.	0.	0.	2.	11.	19.	25.	29.	31.	29.	25.	22.	25.	2.	0.	0.	220.	70.	84.	59.	65.	
NORTH		0.	0.	0.	0.	2.	11.	19.	25.	29.	31.	29.	25.	19.	11.	2.	0.	0.	202.	69.	81.	58.	63.	
NORTHEAST		0.	0.	0.	0.	2.	25.	22.	25.	29.	31.	29.	25.	19.	11.	2.	0.	0.	220.	70.	84.	59.	65.	
EAST		0.	0.	0.	0.	3.	59.	75.	70.	53.	31.	29.	25.	19.	11.	2.	0.	0.	375.	82.	104.	64.	74.	
SOUTHEAST		0.	0.	0.	0.	3.	64.	94.	105.	102.	88.	68.	42.	19.	11.	2.	0.	0.	597.	98.	134.	71.	86.	
HORIZ.		0.	0.	0.	0.	3.	27.	53.	75.	88.	93.	88.	75.	53.	27.	3.	0.	0.	585.	97.	133.	70.	86.	
MONTH	11	HO	1001.	TOD	46.	TOT	44.	KT	.284	KD	.179													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH		0.	0.	0.	0.	0.	8.	38.	57.	68.	72.	68.	57.	38.	8.	0.	0.	0.	412.	81.	111.	57.	68.	
SOUTHWEST		0.	0.	0.	0.	0.	3.	12.	28.	44.	57.	63.	61.	48.	11.	0.	0.	0.	327.	74.	97.	54.	63.	
WEST		0.	0.	0.	0.	0.	3.	10.	16.	19.	21.	33.	39.	36.	10.	0.	0.	0.	187.	62.	75.	50.	55.	
NORTHWEST		0.	0.	0.	0.	0.	3.	10.	16.	19.	21.	19.	16.	10.	5.	0.	0.	0.	120.	56.	65.	48.	51.	
NORTH		0.	0.	0.	0.	0.	3.	10.	16.	19.	21.	19.	16.	10.	3.	0.	0.	0.	119.	56.	64.	48.	51.	
NORTHEAST		0.	0.	0.	0.	0.	5.	10.	16.	19.	21.	19.	16.	10.	3.	0.	0.	0.	120.	56.	65.	48.	51.	
EAST		0.	0.	0.	0.	0.	10.	36.	39.	33.	21.	19.	16.	10.	3.	0.	0.	0.	187.	62.	75.	50.	55.	
SOUTHEAST		0.	0.	0.	0.	0.	11.	48.	61.	63.	57.	44.	28.	12.	3.	0.	0.	0.	327.	74.	97.	54.	63.	
HORIZ.		0.	0.	0.	0.	0.	6.	23.	39.	49.	52.	49.	39.	23.	6.	0.	0.	0.	285.	70.	91.	53.	60.	
MONTH	12	HO	796.	TOD	41.	TOT	40.	KT	.269	KD	.179													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH		0.	0.	0.	0.	0.	1.	28.	48.	59.	63.	59.	48.	28.	1.	0.	0.	0.	335.	73.	99.	51.	59.	
SOUTHWEST		0.	0.	0.	0.	0.	1.	9.	24.	39.	50.	54.	51.	35.	1.	0.	0.	0.	264.	66.	86.	48.	55.	
WEST		0.	0.	0.	0.	0.	1.	7.	13.	16.	17.	27.	32.	25.	1.	0.	0.	0.	140.	55.	65.	44.	48.	
NORTHWEST		0.	0.	0.	0.	0.	1.	7.	13.	16.	17.	16.	13.	7.	1.	0.	0.	0.	92.	50.	57.	43.	45.	
NORTH		0.	0.	0.	0.	0.	1.	7.	13.	16.	17.	16.	13.	7.	1.	0.	0.	0.	92.	50.	57.	43.	45.	
NORTHEAST		0.	0.	0.	0.	0.	1.	7.	13.	16.	17.	16.	13.	7.	1.	0.	0.	0.	92.	50.	57.	43.	45.	
EAST		0.	0.	0.	0.	0.	1.	25.	32.	27.	17.	16.	13.	7.	1.	0.	0.	0.	140.	55.	65.	44.	48.	
SOUTHEAST		0.	0.	0.	0.	0.	1.	35.	51.	54.	50.	39.	24.	9.	1.	0.	0.	0.	264.	66.	86.	48.	55.	
HORIZ.		0.	0.	0.	0.	0.	1.	16.	30.	39.	42.	39.	30.	16.	1.	0.	0.	0.	213.	61.	78.	47.	52.	

LOCATION SEATTLE, WASHINGTON LATITUDE 47 DEGREES 36 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	70.	87.	105.	104.	106.	106.	116.	128.	129.	108.	81.	73.	101.
SOUTHWEST	64.	80.	99.	106.	112.	112.	123.	129.	122.	98.	74.	66.	99.
WEST	54.	67.	86.	100.	111.	114.	122.	121.	106.	82.	62.	55.	90.
NORTHWEST	49.	59.	72.	86.	100.	105.	110.	105.	89.	70.	56.	50.	79.
NORTH	49.	57.	67.	77.	89.	95.	99.	94.	83.	69.	56.	50.	74.
NORTHEAST	49.	59.	72.	86.	100.	105.	110.	105.	89.	70.	56.	50.	79.
EAST	54.	67.	86.	100.	111.	114.	122.	121.	106.	82.	62.	55.	90.
SOUTHEAST	64.	80.	99.	106.	112.	112.	123.	129.	122.	98.	74.	66.	99.
HORIZ.	62.	81.	109.	132.	150.	153.	163.	159.	133.	97.	70.	61.	114.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	96.	124.	152.	147.	142.	138.	154.	174.	180.	153.	111.	99.	139.
SOUTHWEST	85.	110.	141.	150.	153.	150.	165.	176.	168.	134.	97.	86.	135.
WEST	67.	87.	118.	139.	152.	153.	164.	163.	140.	104.	75.	65.	119.
NORTHWEST	58.	71.	92.	114.	132.	137.	143.	134.	111.	84.	65.	57.	100.
NORTH	57.	69.	83.	97.	113.	119.	123.	114.	100.	81.	64.	57.	90.
NORTHEAST	58.	71.	92.	114.	132.	137.	143.	134.	111.	84.	65.	57.	100.
EAST	67.	87.	118.	139.	152.	153.	164.	163.	140.	104.	75.	65.	119.
SOUTHEAST	85.	110.	141.	150.	153.	150.	165.	176.	168.	134.	97.	86.	135.
HORIZ.	81.	113.	160.	197.	221.	221.	237.	230.	188.	133.	91.	78.	162.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	49.	60.	74.	79.	85.	88.	95.	99.	93.	75.	57.	51.	75.
SOUTHWEST	47.	57.	71.	77.	89.	92.	99.	99.	89.	71.	54.	48.	75.
WEST	43.	52.	64.	77.	89.	93.	99.	95.	81.	64.	50.	44.	71.
NORTHWEST	41.	48.	57.	69.	81.	87.	91.	86.	73.	59.	48.	43.	65.
NORTH	41.	47.	54.	63.	75.	81.	84.	79.	70.	58.	48.	43.	62.
NORTHEAST	41.	48.	57.	69.	81.	87.	91.	86.	73.	59.	48.	43.	65.
EAST	43.	52.	64.	77.	89.	93.	99.	95.	81.	64.	50.	44.	71.
SOUTHEAST	47.	57.	71.	80.	89.	92.	99.	99.	89.	71.	54.	48.	75.
HORIZ.	46.	58.	76.	95.	113.	119.	125.	117.	95.	70.	53.	47.	84.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	58.	76.	97.	104.	108.	110.	119.	125.	119.	95.	68.	59.	95.
SOUTHWEST	54.	70.	92.	105.	115.	117.	126.	127.	112.	86.	63.	55.	94.
WEST	47.	60.	80.	99.	114.	119.	125.	119.	98.	74.	55.	48.	87.
NORTHWEST	44.	53.	67.	85.	102.	108.	112.	102.	83.	65.	51.	45.	76.
NORTH	44.	52.	63.	75.	90.	97.	99.	91.	78.	63.	51.	45.	71.
NORTHEAST	44.	53.	67.	85.	102.	108.	112.	102.	83.	65.	51.	45.	76.
EAST	54.	70.	92.	105.	114.	119.	125.	119.	98.	74.	55.	48.	87.
SOUTHEAST	54.	70.	92.	105.	114.	119.	125.	127.	112.	86.	63.	55.	94.
HORIZ.	53.	71.	101.	132.	158.	164.	171.	157.	123.	86.	60.	52.	111.



LOCATION SPOKANE, WASHINGTON LATITUDE 47 DEGREES 40 MINUTES

MONTH	1	HO	1007.	TOD	26.	TOT	25.	KT	.478	KD	.187						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	18.	89.	133.	158.	166.	158.	133.	89.	18.	0.	0.	0.	0.
SOUTHWEST	0.	0.	0.	0.	4.	16.	54.	93.	125.	144.	145.	117.	28.	0.	0.	0.	0.
WEST	0.	0.	0.	0.	4.	12.	19.	24.	25.	60.	84.	83.	24.	0.	0.	0.	0.
NORTHWEST	0.	0.	0.	0.	4.	12.	19.	24.	25.	24.	19.	12.	8.	0.	0.	0.	0.
NORTH	0.	0.	0.	0.	4.	12.	19.	24.	25.	24.	19.	12.	4.	0.	0.	0.	0.
NORTHEAST	0.	0.	0.	0.	8.	12.	19.	24.	25.	24.	19.	12.	4.	0.	0.	0.	0.
EAST	0.	0.	0.	0.	24.	83.	84.	60.	25.	24.	19.	12.	4.	0.	0.	0.	0.
SOUTHEAST	0.	0.	0.	0.	28.	117.	145.	144.	125.	93.	54.	16.	4.	0.	0.	0.	0.
HORIZ.	0.	0.	0.	0.	7.	38.	66.	84.	91.	84.	66.	38.	7.	0.	0.	0.	0.

MONTH	2	HO	1603.	TOD	32.	TOT	30.	KT	.579	KD	.177						
HOURLY SOLAR RADIATION																	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	4.	74.	132.	174.	199.	208.	199.	174.	132.	74.	4.	0.	0.
SOUTHWEST	0.	0.	0.	0.	2.	12.	22.	65.	115.	158.	187.	198.	184.	133.	7.	0.	0.
WEST	0.	0.	0.	0.	2.	12.	22.	29.	34.	36.	85.	124.	142.	121.	7.	0.	0.
NORTHWEST	0.	0.	0.	0.	2.	12.	22.	29.	34.	36.	34.	29.	29.	45.	4.	0.	0.
NORTH	0.	0.	0.	0.	2.	12.	22.	29.	34.	36.	34.	29.	22.	12.	2.	0.	0.
NORTHEAST	0.	0.	0.	0.	4.	45.	29.	34.	36.	34.	29.	22.	12.	2.	0.	0.	0.
EAST	0.	0.	0.	0.	7.	121.	142.	124.	85.	36.	34.	29.	22.	12.	2.	0.	0.
SOUTHEAST	0.	0.	0.	0.	7.	133.	184.	198.	187.	158.	115.	65.	22.	12.	2.	0.	0.
HORIZ.	0.	0.	0.	0.	3.	41.	84.	119.	141.	149.	141.	119.	84.	41.	3.	0.	0.
DAILY TOTAL RADIATION																	
SAG/DAYTIME SATGS SATGD																	
SAG/ALL DAY SATGS SATG																	
SAG/ALL DAY SATGS SATG																	

MONTH	3	HO	2310.	TOD	40.	TOT	38.	KT	.556	KD	.180						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	28.	75.	118.	152.	173.	181.	173.	152.	118.	75.	28.	0.	0.	0.
SOUTHWEST	0.	0.	0.	10.	21.	31.	56.	102.	141.	169.	182.	177.	149.	89.	0.	0.	0.
WEST	0.	0.	0.	10.	21.	31.	39.	43.	45.	91.	128.	150.	149.	104.	0.	0.	0.
NORTHWEST	0.	0.	0.	10.	21.	31.	39.	43.	45.	43.	39.	53.	73.	64.	0.	0.	0.
NORTH	0.	0.	0.	10.	21.	31.	39.	43.	45.	43.	39.	31.	21.	10.	0.	0.	0.
NORTHEAST	0.	0.	0.	64.	73.	53.	39.	43.	45.	43.	39.	31.	21.	10.	0.	0.	0.
EAST	0.	0.	104.	149.	150.	128.	91.	45.	43.	43.	39.	31.	21.	10.	0.	0.	0.
SOUTHEAST	0.	0.	0.	89.	149.	177.	182.	169.	141.	102.	56.	31.	21.	10.	0.	0.	0.
HORIZ.	0.	0.	0.	32.	77.	119.	152.	172.	179.	172.	152.	119.	77.	32.	0.	0.	0.

LOCATION	SPOKANE, WASHINGTON										LATITUDE 47 DEGREES 40 MINUTES																
MONTH	4	HO	3058.	TOD	49.	TOT	46.	KT	.602	KD	.174																
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SATGS SATGD					
SOUTH	0.	0.	8.	27.	70.	112.	145.	167.	174.	167.	145.	112.	70.	27.	8.	0.	0.	1231.	118.	174.	86.	118.	120.	177.	87.	120.	120.
SOUTHWEST	0.	0.	8.	19.	30.	40.	47.	96.	139.	170.	186.	185.	165.	123.	55.	0.	0.	1265.	120.	177.	87.	120.	120.	177.	87.	120.	120.
WEST	0.	0.	8.	19.	30.	40.	47.	52.	54.	104.	146.	173.	181.	159.	86.	0.	0.	1100.	111.	161.	82.	110.	120.	177.	87.	120.	120.
NORTHWEST	0.	0.	8.	19.	30.	40.	47.	52.	54.	52.	48.	84.	109.	113.	71.	0.	0.	727.	90.	123.	70.	89.	120.	177.	87.	120.	120.
NORTH	0.	0.	19.	19.	30.	40.	47.	52.	54.	52.	47.	40.	30.	19.	19.	0.	0.	471.	75.	97.	61.	74.	120.	177.	87.	120.	120.
NORTHEAST	0.	0.	71.	113.	109.	84.	48.	52.	54.	52.	47.	40.	30.	19.	8.	0.	0.	727.	90.	123.	70.	89.	120.	177.	87.	120.	120.
EAST	0.	0.	86.	159.	181.	173.	146.	104.	54.	52.	47.	40.	30.	19.	8.	0.	0.	1100.	111.	161.	82.	110.	120.	177.	87.	120.	120.
SOUTHEAST	0.	0.	55.	123.	155.	185.	186.	170.	139.	96.	47.	40.	30.	19.	8.	0.	0.	1265.	120.	177.	87.	120.	120.	177.	87.	120.	120.
HORIZ.	0.	0.	24.	72.	122.	166.	200.	222.	229.	222.	200.	166.	122.	72.	24.	0.	0.	1841.	152.	236.	105.	154.	120.	177.	87.	120.	120.
MONTH	5	HO	3568.	TOD	58.	TOT	55.	KT	.603	KD	.173																
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SATGS SATGD					
SOUTH	0.	4.	14.	25.	57.	95.	125.	145.	152.	145.	125.	95.	57.	25.	14.	4.	0.	1084.	117.	161.	92.	120.	120.	177.	87.	120.	120.
SOUTHWEST	0.	4.	14.	25.	36.	45.	52.	84.	124.	154.	170.	171.	154.	122.	74.	15.	0.	1245.	125.	177.	97.	130.	120.	177.	87.	120.	120.
WEST	0.	4.	14.	25.	36.	45.	52.	56.	58.	106.	146.	173.	183.	170.	126.	32.	0.	1226.	124.	175.	97.	129.	120.	177.	87.	120.	120.
NORTHWEST	0.	4.	14.	25.	36.	45.	52.	56.	58.	56.	66.	100.	125.	134.	113.	33.	0.	919.	108.	146.	86.	110.	120.	177.	87.	120.	120.
NORTH	0.	17.	42.	34.	36.	45.	52.	56.	58.	56.	52.	45.	36.	34.	42.	17.	0.	622.	92.	117.	76.	92.	120.	177.	87.	120.	120.
NORTHEAST	0.	33.	113.	134.	125.	100.	66.	56.	58.	56.	52.	45.	36.	25.	14.	4.	0.	919.	108.	146.	86.	110.	120.	177.	87.	120.	120.
EAST	0.	32.	126.	170.	183.	173.	146.	106.	58.	56.	52.	45.	36.	25.	14.	4.	0.	1226.	124.	175.	97.	129.	120.	177.	87.	120.	120.
SOUTHEAST	0.	15.	74.	122.	154.	171.	170.	154.	124.	84.	52.	45.	36.	25.	14.	4.	0.	1245.	125.	177.	97.	130.	120.	177.	87.	120.	120.
HORIZ.	0.	10.	49.	98.	146.	188.	220.	241.	248.	241.	220.	188.	146.	98.	49.	10.	0.	2151.	174.	263.	128.	185.	120.	177.	87.	120.	120.
MONTH	6	HO	3760.	TOD	65.	TOT	61.	KT	.593	KD	.175																
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SATGS SATGD					
SOUTH	0.	7.	17.	28.	50.	86.	115.	134.	140.	134.	115.	86.	50.	28.	17.	7.	0.	1014.	117.	158.	96.	123.	120.	177.	87.	120.	120.
SOUTHWEST	0.	7.	17.	28.	38.	47.	53.	78.	117.	145.	160.	161.	146.	116.	74.	24.	0.	1208.	127.	176.	103.	134.	120.	177.	87.	120.	120.
WEST	0.	7.	17.	28.	38.	47.	53.	58.	59.	104.	142.	168.	178.	168.	130.	55.	0.	1251.	130.	179.	104.	137.	120.	177.	87.	120.	120.
NORTHWEST	0.	7.	17.	28.	38.	47.	53.	58.	59.	58.	72.	105.	128.	137.	121.	57.	0.	983.	116.	155.	95.	121.	120.	177.	87.	120.	120.
NORTH	0.	31.	50.	42.	38.	47.	53.	58.	59.	58.	53.	47.	38.	42.	50.	31.	0.	695.	101.	128.	85.	103.	120.	177.	87.	120.	120.
NORTHEAST	0.	57.	121.	137.	128.	105.	72.	58.	59.	58.	53.	47.	38.	28.	17.	7.	0.	983.	116.	155.	95.	121.	120.	177.	87.	120.	120.
EAST	0.	55.	130.	168.	178.	168.	142.	104.	59.	58.	53.	47.	38.	28.	17.	7.	0.	1251.	130.	179.	104.	137.	120.	177.	87.	120.	120.
SOUTHEAST	0.	24.	74.	116.	146.	161.	160.	145.	117.	78.	53.	47.	38.	28.	17.	7.	0.	1208.	127.	176.	103.	134.	120.	177.	87.	120.	120.
HORIZ.	0.	17.	58.	106.	152.	192.	223.	242.	249.	242.	223.	192.	152.	106.	58.	17.	0.	2230.	180.	269.	138.	196.	120.	177.	87.	120.	120.

LOCATION SPOKANE, WASHINGTON LATITUDE 47 DEGREES 40 MINUTES

MONTH 7 HO 3568. TOD 73. TOT 70. KT .684 KD .153

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	4.	14.	25.	60.	105.	142.	165.	173.	165.	142.	105.	60.	25.	14.	4.	0.	1202.	138.	188.
SOUTHWEST	0.	4.	14.	25.	35.	44.	52.	90.	139.	176.	197.	199.	181.	142.	85.	17.	0.	1399.	149.	207.
WEST	0.	4.	14.	25.	35.	44.	52.	56.	57.	117.	167.	202.	216.	202.	148.	37.	0.	1376.	148.	204.
NORTHWEST	0.	4.	14.	25.	35.	44.	52.	56.	57.	56.	70.	113.	145.	158.	132.	38.	0.	999.	127.	169.
NORTH	0.	19.	47.	36.	35.	44.	52.	56.	57.	56.	52.	44.	35.	36.	47.	19.	0.	636.	108.	134.
NORTHEAST	0.	38.	132.	158.	145.	113.	70.	56.	57.	56.	52.	44.	35.	25.	14.	4.	0.	999.	127.	169.
EAST	0.	37.	148.	202.	216.	202.	167.	117.	57.	56.	52.	44.	35.	25.	14.	4.	0.	1376.	148.	204.
SOUTHEAST	0.	17.	85.	142.	181.	199.	197.	176.	139.	90.	52.	44.	35.	25.	14.	4.	0.	1399.	149.	207.
HORIZ.	0.	10.	54.	110.	165.	214.	251.	275.	283.	275.	251.	214.	165.	110.	54.	10.	0.	2441.	205.	306.

MONTH 8 HO 3038. TOD 72. TOT 68. KT .656 KD .160

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	8.	27.	74.	121.	159.	184.	192.	184.	159.	121.	74.	27.	8.	0.	0.	1339.	151.	212.
SOUTHWEST	0.	0.	8.	19.	30.	39.	47.	103.	152.	188.	207.	206.	182.	134.	57.	0.	0.	1370.	153.	216.
WEST	0.	0.	8.	19.	30.	39.	47.	52.	53.	112.	160.	192.	201.	174.	89.	0.	0.	1176.	142.	195.
NORTHWEST	0.	0.	8.	19.	30.	39.	47.	52.	53.	52.	47.	90.	119.	123.	73.	0.	0.	752.	116.	151.
NORTH	0.	0.	19.	19.	30.	39.	47.	52.	53.	52.	47.	39.	30.	19.	19.	0.	0.	465.	99.	121.
NORTHEAST	0.	0.	73.	123.	119.	90.	47.	52.	53.	52.	47.	39.	30.	19.	8.	0.	0.	752.	116.	151.
EAST	0.	0.	89.	174.	201.	192.	160.	112.	53.	52.	47.	39.	30.	19.	8.	0.	0.	1176.	142.	195.
SOUTHEAST	0.	0.	57.	134.	182.	206.	207.	188.	152.	103.	47.	39.	30.	19.	8.	0.	0.	1370.	153.	216.
HORIZ.	0.	0.	24.	76.	131.	180.	218.	242.	250.	242.	218.	180.	131.	76.	24.	0.	0.	1993.	190.	281.

MONTH 9 HO 2304. TOD 63. TOT 59. KT .616 KD .170

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	30.	83.	133.	172.	197.	205.	197.	172.	133.	83.	30.	0.	0.	0.	1434.	160.	235.
SOUTHWEST	0.	0.	0.	10.	21.	31.	39.	59.	112.	159.	192.	207.	201.	169.	97.	0.	0.	1259.	148.	214.
WEST	0.	0.	0.	10.	21.	31.	39.	44.	45.	100.	144.	170.	168.	114.	0.	0.	0.	887.	123.	169.
NORTHWEST	0.	0.	0.	10.	21.	31.	39.	44.	45.	44.	39.	58.	82.	69.	0.	0.	0.	483.	96.	121.
NORTH	0.	0.	0.	10.	21.	31.	39.	44.	45.	44.	39.	31.	21.	10.	0.	0.	0.	337.	86.	103.
NORTHEAST	0.	0.	0.	69.	82.	58.	39.	44.	45.	44.	39.	31.	21.	10.	0.	0.	0.	483.	96.	121.
EAST	0.	0.	0.	114.	168.	170.	144.	100.	45.	44.	39.	31.	21.	10.	0.	0.	0.	887.	123.	169.
SOUTHEAST	0.	0.	0.	97.	169.	201.	207.	192.	159.	112.	59.	31.	21.	10.	0.	0.	0.	1259.	148.	214.
HORIZ.	0.	0.	1.	33.	84.	131.	168.	192.	200.	192.	168.	131.	84.	33.	1.	0.	0.	1419.	159.	233.

LOCATION	SPOKANE, WASHINGTON										LATITUDE 47 DEGREES 40 MINUTES									
MONTH 10	HO 1570.	TOD	51.	TOT	49.	KT	.494	KD	.188											
ORIENTATION	HOURLY SOLAR RADIATION																			
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
SOUTH	0.	0.	0.	2.	56.	104.	138.	159.	166.	159.	138.	104.	56.	2.	0.	0.				
SOUTHWEST	0.	0.	0.	2.	11.	21.	55.	95.	128.	150.	156.	143.	98.	3.	0.	0.				
WEST	0.	0.	0.	2.	11.	21.	28.	33.	34.	72.	100.	111.	89.	3.	0.	0.				
NORTHWEST	0.	0.	0.	2.	11.	21.	28.	33.	34.	33.	28.	26.	35.	2.	0.	0.				
NORTH	0.	0.	0.	2.	11.	21.	28.	33.	34.	33.	28.	21.	11.	2.	0.	0.				
NORTHEAST	0.	0.	0.	2.	35.	26.	28.	33.	34.	33.	28.	21.	11.	2.	0.	0.				
EAST	0.	0.	0.	3.	89.	111.	100.	72.	34.	33.	28.	21.	11.	2.	0.	0.				
SOUTHEAST	0.	0.	0.	3.	98.	143.	156.	150.	128.	95.	55.	21.	11.	2.	0.	0.				
HORIZ.	0.	0.	0.	3.	34.	70.	100.	119.	125.	119.	100.	70.	34.	3.	0.	0.				
DAILY TOTAL RADIATION																				
1084.																				
SAG/DAYTIME SATGS SATGD																				
132. 197.																				
SAG/ALL DAY SATGN																				
83. 112.																				
115. 167.																				
89. 119.																				
504. 78.																				
254. 63.																				
225. 86.																				
68. 82.																				
56. 57.																				
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70. 86.																				
57. 63.																				
89. 119.																				
65. 78.																				
115. 167.																				
76. 99.																				
109. 156.																				
73. 94.																				
MONTH 11	HO 997.	TOD	37.	TOT	36.	KT	.428	KD	.184											
ORIENTATION	HOURLY SOLAR RADIATION																			
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
SOUTH	0.	0.	0.	0.	14.	75.	113.	135.	142.	135.	113.	75.	14.	0.	0.	0.				
SOUTHWEST	0.	0.	0.	0.	3.	15.	47.	80.	107.	123.	123.	98.	21.	0.	0.	0.				
WEST	0.	0.	0.	0.	3.	12.	18.	23.	24.	53.	72.	70.	18.	0.	0.	0.				
NORTHWEST	0.	0.	0.	0.	3.	12.	18.	23.	24.	23.	18.	12.	6.	0.	0.	0.				
NORTH	0.	0.	0.	0.	3.	12.	18.	23.	24.	23.	18.	12.	3.	0.	0.	0.				
NORTHEAST	0.	0.	0.	0.	6.	12.	18.	23.	24.	23.	18.	12.	3.	0.	0.	0.				
EAST	0.	0.	0.	0.	18.	70.	72.	53.	24.	23.	18.	12.	3.	0.	0.	0.				
SOUTHEAST	0.	0.	0.	0.	21.	98.	123.	123.	107.	80.	47.	15.	3.	0.	0.	0.				
HORIZ.	0.	0.	0.	0.	7.	33.	58.	75.	80.	75.	58.	33.	7.	0.	0.	0.				
DAILY TOTAL RADIATION																				
815.																				
SAG/DAYTIME SATGS SATGD																				
108. 166.																				
SAG/ALL DAY SATGN																				
62. 83.																				
91. 135.																				
56. 72.																				
63. 84.																				
45. 53.																				
292. 44.																				
138. 59.																				
49. 40.																				
135. 44.																				
49. 40.																				
138. 44.																				
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292. 53.																				
63. 84.																				
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91. 135.																				
56. 72.																				
74. 105.																				
49. 61.																				
MONTH 12	HO 792.	TOD	30.	TOT	29.	KT	.345	KD	.181											
ORIENTATION	HOURLY SOLAR RADIATION																			
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
SOUTH	0.	0.	0.	0.	1.	45.	78.	96.	102.	96.	78.	45.	1.	0.	0.	0.				
SOUTHWEST	0.	0.	0.	1.	11.	35.	59.	77.	87.	84.	57.	1.	0.	0.	0.	0.				
WEST	0.	0.	0.	1.	8.	14.	18.	19.	38.	48.	40.	1.	0.	0.	0.	0.				
NORTHWEST	0.	0.	0.	1.	8.	14.	18.	19.	18.	14.	8.	1.	0.	0.	0.	0.				
NORTH	0.	0.	0.	1.	8.	14.	18.	19.	18.	14.	8.	1.	0.	0.	0.	0.				
NORTHEAST	0.	0.	0.	1.	8.	14.	18.	19.	18.	14.	8.	1.	0.	0.	0.	0.				
EAST	0.	0.	0.	1.	40.	48.	38.	19.	18.	14.	8.	1.	0.	0.	0.	0.				
SOUTHEAST	0.	0.	0.	1.	57.	84.	87.	77.	59.	35.	11.	1.	0.	0.	0.	0.				
HORIZ.	0.	0.	0.	1.	19.	38.	51.	55.	51.	38.	19.	1.	0.	0.	0.	0.				
DAILY TOTAL RADIATION																				
542.																				
SAG/DAYTIME SATGS SATGD																				
81. 123.																				
SAG/ALL DAY SATGN																				
46. 61.																				
69. 101.																				
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ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	110.	133.	122.	118.	117.	117.	138.	151.	160.	132.	108.	81.	124.
SOUTHWEST	89.	111.	113.	120.	125.	127.	149.	153.	148.	115.	91.	69.	118.
WEST	56.	77.	92.	111.	124.	130.	148.	142.	123.	89.	63.	48.	100.
NORTHWEST	39.	52.	70.	90.	108.	116.	127.	116.	96.	70.	49.	40.	81.
NORTH	39.	49.	62.	75.	92.	101.	108.	99.	86.	68.	49.	40.	72.
NORTHEAST	39.	52.	70.	90.	108.	116.	127.	116.	96.	70.	49.	40.	81.
EAST	56.	77.	92.	111.	124.	130.	148.	142.	123.	89.	63.	48.	100.
SOUTHEAST	89.	111.	113.	120.	125.	127.	149.	153.	148.	115.	91.	69.	118.
HORIZ.	68.	100.	123.	152.	174.	180.	205.	190.	159.	109.	74.	56.	133.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	178.	215.	188.	174.	161.	158.	188.	212.	235.	197.	166.	123.	183.
SOUTHWEST	141.	177.	171.	177.	177.	176.	207.	216.	214.	167.	135.	101.	171.
WEST	79.	114.	135.	161.	175.	179.	204.	195.	169.	119.	84.	62.	140.
NORTHWEST	50.	69.	94.	123.	146.	155.	169.	151.	121.	86.	59.	47.	106.
NORTH	49.	63.	79.	97.	117.	128.	134.	121.	103.	82.	59.	47.	90.
NORTHEAST	50.	69.	94.	123.	146.	155.	169.	151.	121.	86.	59.	47.	106.
EAST	79.	114.	135.	161.	175.	179.	204.	195.	169.	119.	84.	62.	140.
SOUTHEAST	141.	177.	171.	177.	177.	176.	207.	216.	214.	167.	135.	101.	171.
HORIZ.	102.	156.	189.	236.	263.	269.	306.	281.	233.	156.	105.	77.	198.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	56.	74.	79.	86.	92.	96.	111.	114.	108.	83.	62.	46.	84.
SOUTHWEST	48.	64.	74.	87.	97.	103.	117.	115.	102.	76.	56.	42.	82.
WEST	36.	49.	64.	82.	97.	104.	117.	108.	90.	65.	45.	35.	74.
NORTHWEST	30.	39.	53.	70.	86.	95.	104.	94.	76.	57.	40.	32.	65.
NORTH	29.	37.	49.	61.	76.	85.	91.	84.	71.	56.	40.	32.	59.
NORTHEAST	30.	39.	53.	70.	86.	95.	104.	94.	76.	57.	40.	32.	65.
EAST	36.	49.	64.	82.	97.	104.	117.	108.	90.	65.	45.	35.	74.
SOUTHEAST	48.	64.	74.	87.	97.	103.	117.	115.	102.	76.	56.	42.	82.
HORIZ.	40.	59.	79.	105.	128.	138.	153.	136.	108.	73.	49.	38.	92.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	81.	110.	112.	118.	120.	123.	142.	149.	146.	112.	83.	61.	113.
SOUTHWEST	67.	93.	104.	120.	130.	134.	154.	151.	135.	99.	72.	51.	109.
WEST	44.	65.	85.	110.	129.	137.	153.	139.	113.	78.	53.	40.	96.
NORTHWEST	33.	46.	65.	89.	110.	121.	130.	113.	88.	63.	44.	35.	78.
NORTH	33.	43.	58.	74.	92.	103.	108.	96.	80.	62.	44.	35.	68.
NORTHEAST	33.	46.	65.	89.	110.	121.	130.	113.	88.	63.	44.	35.	78.
EAST	44.	65.	85.	110.	129.	137.	153.	139.	113.	78.	53.	40.	96.
SOUTHEAST	67.	93.	104.	120.	130.	134.	154.	151.	135.	99.	72.	51.	109.
HORIZ.	53.	84.	113.	154.	185.	196.	217.	188.	145.	94.	61.	45.	128.

LOCATION	STATE COLLEGE, PA.	LATITUDE	40 DEGREES	48 MINUTES
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MONTH	1	HO	1386.	TOD	31.	TOT	28.	KT	.381	KD	.182	HOURLY SOLAR RADIATION								DAILY TOTAL RADIATION	SAG/DAYTIME SATGS		SAG/ALL DAY SATGD	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20							
SOUTH	0.	0.	0.	0.	34.	73.	98.	113.	118.	113.	98.	73.	34.	0.	0.	0.	0.	753.	92.	141.	53.	72.		
SOUTHWEST	0.	0.	0.	0.	7.	18.	45.	71.	92.	105.	108.	95.	53.	0.	0.	0.	0.	593.	79.	118.	48.	63.		
WEST	0.	0.	0.	0.	7.	16.	23.	28.	29.	52.	68.	71.	46.	0.	0.	0.	0.	341.	59.	81.	39.	48.		
NORTHWEST	0.	0.	0.	0.	7.	16.	23.	28.	29.	28.	23.	16.	7.	0.	0.	0.	0.	187.	46.	59.	35.	39.		
NORTH	0.	0.	0.	0.	7.	16.	23.	28.	29.	28.	23.	16.	7.	0.	0.	0.	0.	179.	46.	57.	34.	39.		
NORTHEAST	0.	0.	0.	0.	16.	16.	23.	28.	29.	28.	23.	16.	7.	0.	0.	0.	0.	187.	46.	59.	35.	39.		
EAST	0.	0.	0.	0.	46.	71.	68.	52.	29.	28.	23.	16.	7.	0.	0.	0.	0.	341.	59.	81.	39.	48.		
SOUTHEAST	0.	0.	0.	0.	53.	95.	108.	105.	92.	71.	45.	18.	7.	0.	0.	0.	0.	593.	79.	118.	48.	63.		
HORIZ.	0.	0.	0.	0.	17.	46.	70.	85.	90.	85.	70.	46.	17.	0.	0.	0.	0.	529.	74.	108.	45.	59.		

MONTH	2	H0	1956.	T00	31.	T0T	29.	KT	.413	KD	.184									
ORIENTATION																				
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD
SOUTH	0.	0.	0.	10.	52.	84.	108.	122.	127.	122.	108.	84.	52.	10.	0.	0.	0.	878.	94.	145.
SOUTHWEST	0.	0.	0.	4.	15.	24.	47.	77.	101.	117.	123.	116.	90.	22.	0.	0.	0.	737.	84.	127.
WEST	0.	0.	0.	0.	4.	15.	24.	32.	37.	38.	65.	85.	94.	84.	23.	0.	0.	502.	67.	97.
NORTHWEST	0.	0.	0.	4.	15.	24.	32.	37.	38.	37.	32.	32.	37.	13.	0.	0.	0.	300.	53.	70.
NORTH	0.	0.	0.	4.	15.	24.	32.	37.	38.	37.	32.	24.	15.	4.	0.	0.	0.	261.	50.	65.
NORTHEAST	0.	0.	0.	13.	37.	32.	32.	37.	38.	37.	32.	24.	15.	4.	0.	0.	0.	300.	53.	70.
EAST	0.	0.	0.	23.	84.	94.	85.	65.	38.	37.	32.	24.	15.	4.	0.	0.	0.	502.	67.	97.
SOUTHEAST	0.	0.	0.	22.	90.	116.	123.	117.	101.	77.	47.	24.	15.	4.	0.	0.	0.	737.	84.	127.
HORIZ.	0.	0.	0.	8.	42.	75.	101.	117.	123.	117.	101.	75.	42.	8.	0.	0.	0.	808.	89.	136.

MONTH	3	H0	2592.	T00	40.	T0T	38.	KT	.451	KD	.186						
ORIENTATION																	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	23.	57.	87.	111.	126.	131.	126.	111.	87.	57.	23.	0.	0.	0.
SOUTHWEST	0.	0.	0.	11.	23.	33.	46.	79.	107.	126.	135.	131.	111.	69.	0.	0.	0.
WEST	0.	0.	0.	11.	23.	33.	41.	46.	47.	79.	103.	117.	114.	81.	0.	0.	0.
NORTHWEST	0.	0.	0.	11.	23.	33.	41.	46.	47.	46.	41.	54.	63.	52.	0.	0.	0.
NORTH	0.	0.	0.	11.	23.	33.	41.	46.	47.	46.	41.	33.	23.	11.	0.	0.	0.
NORTHEAST	0.	0.	0.	52.	63.	54.	41.	46.	47.	46.	41.	33.	23.	11.	0.	0.	0.
EAST	0.	0.	0.	81.	114.	117.	103.	79.	47.	46.	41.	33.	23.	11.	0.	0.	0.
SOUTHEAST	0.	0.	0.	69.	111.	131.	135.	126.	107.	79.	46.	33.	23.	11.	0.	0.	0.
HORIZ.	0.	0.	0.	31.	72.	108.	137.	155.	161.	155.	137.	108.	72.	31.	0.	0.	0.
DAILY TOTAL RADIATION												941.	100.	149.	68.	93.	
SAG/DAYTIME SATGS												872.	96.	141.	66.	89.	
SATGS SATGD												697.	84.	121.	60.	78.	
SAG/ALL DAY												458.	69.	93.	53.	65.	
SATGS SATGD												356.	63.	81.	49.	59.	
SAG/ALL DAY												458.	69.	93.	53.	65.	
SATGS SATGD												697.	84.	121.	60.	78.	
SAG/ALL DAY												872.	96.	141.	66.	89.	
SATGS SATGD												1167.	114.	175.	75.	106.	

LOCATION STATE COLLEGE, PA. LATITUDE 40 DEGREES 48 MINUTES

MONTH	4	HO	3219.	TOD	51.	TOT	48.	KT	.448	KD	.185						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	7.	20.	48.	74.	96.	109.	114.	109.	96.	74.	48.	20.	7.	0.	0.
SOUTHWEST	0.	0.	7.	19.	30.	40.	47.	70.	96.	115.	124.	122.	107.	79.	31.	0.	0.
WEST	0.	0.	7.	19.	30.	40.	47.	52.	54.	84.	107.	121.	122.	103.	47.	0.	0.
NORTHWEST	0.	0.	7.	19.	30.	40.	47.	52.	54.	52.	55.	73.	82.	78.	40.	0.	0.
NORTH	0.	0.	13.	19.	30.	40.	47.	52.	54.	52.	47.	40.	30.	19.	13.	0.	0.
NORTHEAST	0.	0.	40.	78.	82.	73.	55.	52.	54.	52.	47.	40.	30.	19.	7.	0.	0.
EAST	0.	0.	47.	103.	122.	121.	107.	84.	54.	52.	47.	40.	30.	19.	7.	0.	0.
SOUTHEAST	0.	0.	31.	79.	107.	122.	124.	115.	96.	70.	47.	40.	30.	19.	7.	0.	0.
HORIZ.	0.	0.	16.	56.	96.	131.	158.	175.	181.	175.	158.	131.	96.	56.	16.	0.	0.

MONTH	5	HO	3619.	TOD	63.	TOT	60.	KT	.493	KD	.188						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	2.	13.	24.	41.	69.	91.	105.	110.	105.	91.	69.	41.	24.	13.	2.	0.
SOUTHWEST	0.	2.	13.	24.	36.	45.	53.	66.	95.	115.	126.	126.	113.	87.	48.	3.	0.
WEST	0.	2.	13.	24.	36.	45.	53.	57.	59.	92.	119.	135.	139.	124.	83.	4.	0.
NORTHWEST	0.	2.	13.	24.	36.	45.	53.	57.	59.	57.	73.	92.	105.	103.	76.	4.	0.
NORTH	0.	3.	32.	36.	36.	45.	53.	57.	59.	57.	53.	45.	36.	36.	32.	3.	0.
NORTHEAST	0.	4.	76.	103.	105.	92.	73.	57.	59.	57.	53.	45.	36.	24.	13.	2.	0.
EAST	0.	4.	83.	124.	139.	135.	119.	92.	59.	57.	53.	45.	36.	24.	13.	2.	0.
SOUTHEAST	0.	3.	48.	87.	113.	126.	126.	115.	95.	66.	53.	45.	36.	24.	13.	2.	0.
HORIZ.	0.	3.	35.	78.	121.	158.	187.	205.	211.	205.	187.	158.	121.	78.	35.	3.	0.

MONTH	6	HO	3763.	TOD	72.	TOT	70.	KT	.539	KD	.183						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	4.	15.	26.	37.	67.	90.	106.	111.	106.	90.	67.	37.	26.	15.	4.	0.
SOUTHWEST	0.	4.	15.	26.	37.	47.	54.	64.	96.	120.	133.	134.	121.	95.	56.	9.	0.
WEST	0.	4.	15.	26.	37.	47.	54.	59.	61.	99.	130.	150.	156.	142.	102.	18.	0.
NORTHWEST	0.	4.	15.	26.	37.	47.	54.	59.	61.	59.	82.	106.	121.	122.	96.	19.	0.
NORTH	0.	11.	43.	45.	38.	47.	54.	59.	61.	59.	54.	47.	38.	45.	43.	11.	0.
NORTHEAST	0.	19.	96.	122.	121.	106.	82.	59.	61.	59.	54.	47.	37.	26.	15.	4.	0.
EAST	0.	18.	102.	142.	156.	150.	130.	99.	61.	59.	54.	47.	37.	26.	15.	4.	0.
SOUTHEAST	0.	9.	56.	95.	121.	134.	133.	120.	96.	64.	54.	47.	37.	26.	15.	4.	0.
HORIZ.	0.	8.	45.	92.	138.	178.	209.	228.	235.	228.	209.	178.	138.	92.	45.	8.	0.
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LOCATION		STATE COLLEGE, PA.		LATITUDE		40 DEGREES		48 MINUTES													
MONTH	10	HO	1922.	TOD	56.	TOT	53.	KT	.496	KD	.188										
ORIENTATION																					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD					
SOUTH	0.	0.	0.	10.	64.	105.	136.	155.	161.	155.	136.	105.	64.	10.	0.	0.	1099.	134.	199.	88.	117.
SOUTHWEST	0.	0.	0.	4.	15.	26.	55.	94.	126.	148.	157.	148.	112.	22.	0.	0.	906.	121.	174.	82.	106.
WEST	0.	0.	0.	4.	15.	26.	34.	39.	41.	78.	106.	118.	104.	23.	0.	0.	588.	98.	132.	72.	87.
NORTHWEST	0.	0.	0.	4.	15.	26.	34.	39.	41.	39.	34.	35.	44.	13.	0.	0.	324.	79.	98.	64.	72.
NORTH	0.	0.	0.	4.	15.	26.	34.	39.	41.	39.	34.	26.	15.	4.	0.	0.	276.	75.	92.	62.	69.
NORTHEAST	0.	0.	0.	13.	44.	35.	34.	39.	41.	39.	34.	26.	15.	4.	0.	0.	324.	79.	98.	64.	72.
EAST	0.	0.	0.	23.	104.	118.	106.	78.	41.	39.	34.	26.	15.	4.	0.	0.	588.	98.	132.	72.	87.
SOUTHEAST	0.	0.	0.	22.	112.	148.	157.	148.	126.	94.	55.	26.	15.	4.	0.	0.	906.	121.	174.	82.	106.
HORIZ.	0.	0.	0.	7.	47.	88.	120.	141.	148.	141.	120.	88.	47.	7.	0.	0.	953.	124.	180.	84.	109.
MONTH 11												DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD					
SOUTH	0.	0.	0.	0.	32.	72.	97.	112.	117.	112.	97.	72.	32.	0.	0.	0.	743.	103.	152.	66.	85.
SOUTHWEST	0.	0.	0.	0.	7.	18.	44.	70.	91.	104.	106.	93.	50.	0.	0.	0.	585.	90.	129.	61.	76.
WEST	0.	0.	0.	0.	0.	7.	16.	23.	28.	29.	52.	67.	69.	43.	0.	0.	335.	70.	92.	53.	61.
NORTHWEST	0.	0.	0.	0.	0.	7.	16.	23.	28.	29.	28.	23.	16.	15.	0.	0.	185.	58.	70.	48.	53.
NORTH	0.	0.	0.	0.	7.	16.	23.	28.	29.	28.	23.	16.	7.	0.	0.	0.	177.	57.	69.	48.	52.
NORTHEAST	0.	0.	0.	0.	15.	16.	23.	28.	29.	28.	23.	16.	7.	0.	0.	0.	185.	58.	70.	48.	53.
EAST	0.	0.	0.	0.	43.	69.	67.	52.	29.	28.	23.	16.	7.	0.	0.	0.	335.	70.	92.	53.	61.
SOUTHEAST	0.	0.	0.	0.	50.	93.	106.	104.	91.	70.	44.	18.	7.	0.	0.	0.	585.	90.	129.	61.	76.
HORIZ.	0.	0.	0.	0.	17.	46.	69.	84.	89.	84.	69.	46.	17.	0.	0.	0.	521.	85.	119.	59.	72.
MONTH 12												DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD					
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20					
HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION				SAG/DAYTIME SAG/ALL DAY SATGS SATGD SATGS SATGD					
SOUTH	0.	0.	0.	0.	21.	68.	95.	111.	116.	111.	95.	68.	21.	0.	0.	0.	707.	93.	142.	54.	72.
SOUTHWEST	0.	0.	0.	0.	5.	17.	44.	69.	90.	102.	103.	86.	32.	0.	0.	0.	548.	79.	117.	49.	63.
WEST	0.	0.	0.	0.	0.	5.	13.	20.	25.	26.	48.	62.	26.	0.	0.	0.	287.	57.	77.	40.	48.
NORTHWEST	0.	0.	0.	0.	0.	5.	13.	20.	25.	26.	25.	20.	13.	8.	0.	0.	155.	46.	56.	36.	40.
NORTH	0.	0.	0.	0.	0.	5.	13.	20.	25.	26.	25.	20.	13.	5.	0.	0.	151.	45.	56.	36.	40.
NORTHEAST	0.	0.	0.	0.	8.	13.	20.	25.	26.	25.	20.	13.	5.	0.	0.	0.	155.	46.	56.	36.	40.
EAST	0.	0.	0.	0.	26.	62.	62.	48.	26.	25.	20.	13.	5.	0.	0.	0.	287.	57.	77.	40.	48.
SOUTHEAST	0.	0.	0.	0.	32.	86.	103.	102.	90.	69.	44.	17.	5.	0.	0.	0.	548.	79.	117.	49.	63.
HORIZ.	0.	0.	0.	0.	10.	37.	60.	75.	80.	75.	60.	37.	10.	0.	0.	0.	441.	70.	101.	45.	57.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	92.	94.	100.	99.	109.	116.	124.	130.	136.	134.	103.	93.	111.
SOUTHWEST	79.	84.	96.	102.	117.	127.	134.	135.	131.	121.	90.	79.	108.
WEST	59.	67.	84.	99.	119.	132.	136.	130.	117.	98.	70.	57.	97.
NORTHWEST	46.	53.	69.	87.	109.	122.	124.	115.	99.	79.	58.	46.	84.
NORTH	46.	50.	77.	96.	122.	136.	140.	130.	117.	91.	75.	45.	77.
NORTHEAST	46.	53.	69.	87.	109.	122.	124.	115.	99.	79.	58.	46.	84.
EAST	59.	67.	84.	99.	119.	132.	136.	130.	117.	98.	70.	57.	97.
SOUTHEAST	79.	84.	96.	102.	117.	127.	134.	135.	131.	121.	90.	79.	108.
HORIZ.	74.	89.	114.	134.	165.	183.	186.	174.	152.	124.	85.	70.	129.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	141.	145.	149.	137.	143.	150.	160.	174.	189.	199.	152.	142.	157.
SOUTHWEST	118.	127.	141.	144.	159.	170.	178.	182.	180.	174.	129.	117.	151.
WEST	81.	97.	121.	138.	162.	179.	182.	174.	156.	132.	92.	77.	132.
NORTHWEST	59.	70.	93.	117.	143.	160.	160.	147.	124.	98.	70.	56.	108.
NORTH	57.	65.	81.	99.	122.	136.	136.	125.	110.	92.	69.	56.	96.
NORTHEAST	59.	70.	93.	117.	143.	160.	160.	147.	124.	98.	70.	56.	108.
EAST	81.	97.	121.	138.	162.	179.	182.	174.	156.	132.	92.	77.	132.
SOUTHEAST	118.	127.	141.	144.	159.	170.	178.	182.	180.	174.	129.	117.	151.
HORIZ.	108.	136.	175.	202.	242.	269.	270.	250.	218.	180.	119.	101.	189.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	53.	57.	68.	75.	88.	97.	103.	104.	100.	88.	66.	54.	79.
SOUTHWEST	48.	52.	66.	77.	93.	104.	109.	106.	97.	82.	61.	49.	79.
WEST	39.	45.	60.	75.	94.	107.	110.	104.	90.	72.	53.	40.	74.
NORTHWEST	35.	38.	53.	69.	88.	101.	103.	95.	81.	64.	48.	36.	67.
NORTH	34.	37.	49.	63.	80.	92.	95.	88.	77.	62.	48.	36.	63.
NORTHEAST	35.	38.	53.	69.	88.	101.	103.	95.	81.	64.	48.	36.	67.
EAST	39.	45.	60.	75.	94.	107.	110.	104.	90.	72.	53.	40.	74.
SOUTHEAST	48.	52.	66.	77.	93.	104.	109.	106.	97.	82.	61.	49.	79.
HORIZ.	45.	55.	75.	95.	122.	139.	140.	128.	108.	84.	59.	45.	91.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	72.	80.	93.	96.	109.	118.	125.	128.	127.	117.	85.	72.	102.
SOUTHWEST	63.	72.	89.	100.	118.	131.	136.	132.	122.	106.	76.	63.	101.
WEST	48.	58.	78.	97.	120.	136.	138.	128.	110.	87.	61.	48.	93.
NORTHWEST	39.	46.	65.	85.	109.	125.	125.	113.	94.	72.	53.	40.	80.
NORTH	39.	44.	59.	75.	96.	109.	110.	101.	87.	69.	52.	40.	73.
NORTHEAST	39.	46.	65.	85.	109.	125.	125.	113.	94.	72.	53.	40.	80.
EAST	48.	58.	78.	97.	120.	136.	138.	128.	110.	87.	61.	48.	93.
SOUTHEAST	63.	72.	89.	100.	118.	131.	136.	132.	122.	106.	76.	63.	101.
HORIZ.	59.	76.	106.	133.	168.	192.	191.	171.	141.	109.	72.	57.	123.

LOCATION STILLWATER, OKLAHOMA LATITUDE 36 DEGREES 9 MINUTES

MONTH	1	HO	1640.	TOD	41.	TOT	37.	KT	484	KD	.187	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS																		
ORIENTATION																																		
												4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
SOUTH												0.	0.	0.	0.	59.	106.	137.	155.	161.	155.	137.	106.	59.	0.	0.	0.	0.	0.	1074.	124.	192.	72.	100.
SOUTHWEST												0.	0.	0.	0.	11.	22.	58.	94.	125.	145.	152.	141.	95.	0.	0.	0.	0.	0.	844.	106.	160.	64.	87.
WEST												0.	0.	0.	0.	11.	21.	30.	35.	37.	71.	96.	106.	82.	0.	0.	0.	0.	0.	490.	79.	110.	53.	66.
NORTHWEST												0.	0.	0.	0.	11.	21.	30.	35.	37.	35.	30.	21.	27.	0.	0.	0.	0.	0.	248.	60.	76.	45.	52.
NORTH												0.	0.	0.	0.	11.	21.	30.	35.	37.	35.	30.	21.	11.	0.	0.	0.	0.	0.	232.	59.	74.	45.	51.
NORTHEAST												0.	0.	0.	0.	27.	21.	30.	35.	37.	35.	30.	21.	11.	0.	0.	0.	0.	0.	248.	60.	76.	45.	52.
EAST												0.	0.	0.	0.	82.	106.	96.	71.	37.	35.	30.	21.	11.	0.	0.	0.	0.	0.	490.	79.	110.	53.	66.
SOUTHEAST												0.	0.	0.	0.	95.	141.	152.	145.	125.	94.	58.	22.	11.	0.	0.	0.	0.	0.	844.	106.	160.	64.	87.
HORIZ.												0.	0.	0.	0.	31.	71.	104.	124.	131.	124.	104.	71.	31.	0.	0.	0.	0.	0.	792.	102.	152.	63.	84.

MONTH	2	HO	2182.	TOD	46.	TOT	42.	KT	.527	KD	.184	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS					
ORIENTATION												RADIATION		SATGS		SATGS					
												19	20								
SOUTH	0.	0.	0.	20.	74.	114.	144.	162.	169.	162.	144.	114.	74.	20.	0.	0.	1196.	130.	198.	80.	112.
SOUTHWEST	0.	0.	0.	5.	18.	30.	57.	98.	133.	158.	170.	164.	134.	48.	0.	0.	1013.	117.	175.	75.	101.
WEST	0.	0.	0.	5.	18.	30.	38.	44.	46.	87.	118.	135.	126.	51.	0.	0.	699.	95.	135.	64.	83.
NORTHWEST	0.	0.	0.	5.	18.	30.	38.	44.	46.	44.	38.	44.	55.	28.	0.	0.	391.	73.	95.	55.	65.
NORTH	0.	0.	0.	5.	18.	30.	38.	44.	46.	44.	38.	30.	18.	5.	0.	0.	317.	68.	86.	52.	60.
NORTHEAST	0.	0.	0.	28.	55.	44.	38.	44.	46.	44.	38.	30.	18.	5.	0.	0.	391.	73.	95.	55.	65.
EAST	0.	0.	0.	51.	126.	135.	118.	87.	46.	44.	38.	30.	18.	5.	0.	0.	699.	95.	135.	64.	83.
SOUTHEAST	0.	0.	0.	48.	134.	164.	170.	158.	133.	98.	57.	30.	18.	5.	0.	0.	1013.	117.	175.	75.	101.
HORIZ.	0.	0.	0.	13.	61.	107.	143.	165.	173.	165.	143.	107.	61.	13.	0.	0.	1151.	126.	192.	79.	109.

MONTH	3	HO	2761.	TOD	54.	TOT	50.	KT	.555	KD	.180	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION																	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	0.	28.	69.	106.	135.	154.	160.	154.	135.	106.	69.	28.	0.	0.
SOUTHWEST	0.	0.	0.	0.	12.	26.	37.	47.	91.	129.	157.	171.	170.	148.	95.	0.	0.
WEST	0.	0.	0.	0.	12.	26.	37.	46.	52.	54.	98.	134.	156.	155.	114.	0.	0.
NORTHWEST	0.	0.	0.	0.	12.	26.	37.	46.	52.	54.	52.	46.	72.	87.	73.	0.	0.
NORTH	0.	0.	0.	0.	12.	26.	37.	46.	52.	54.	52.	46.	37.	26.	12.	0.	0.
NORTHEAST	0.	0.	0.	0.	73.	87.	72.	46.	52.	54.	52.	46.	37.	26.	12.	0.	0.
EAST	0.	0.	0.	0.	114.	155.	156.	134.	98.	54.	52.	46.	37.	26.	12.	0.	0.
SOUTHEAST	0.	0.	0.	0.	95.	148.	170.	171.	157.	129.	91.	47.	37.	26.	12.	0.	0.
HORIZ.	0.	0.	0.	0.	39.	94.	142.	180.	204.	212.	204.	180.	142.	94.	39.	0.	0.

LOCATION	STILLWATER, OKLAHOMA	LATITUDE	36 DEGREES	9 MINUTES																		
MONTH	4	H0	3305.	TOD	64.	TOT	61.	KT	.528	KD												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGD	
		0.	0.	6.	19.	49.	80.	105.	121.	126.	121.	105.	80.	49.	19.	6.	0.	889.	116.	158.	89.	112.
SOUTH	0.	0.	6.	19.	32.	43.	52.	73.	106.	131.	145.	144.	144.	129.	95.	33.	0.	1009.	123.	171.	93.	120.
SOUTHWEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	98.	130.	149.	152.	128.	51.	33.	0.	978.	121.	168.	92.	118.
WEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	57.	59.	92.	105.	98.	43.	0.	0.	734.	107.	142.	84.	103.
NORTHWEST	0.	0.	6.	19.	32.	43.	52.	57.	59.	57.	59.	92.	105.	98.	43.	0.	0.	734.	107.	142.	84.	103.
NORTH	0.	0.	14.	22.	32.	43.	52.	57.	59.	57.	59.	52.	43.	32.	22.	14.	0.	499.	93.	117.	77.	90.
NORTHEAST	0.	0.	43.	98.	105.	92.	69.	57.	59.	57.	59.	52.	43.	32.	19.	6.	0.	734.	107.	142.	84.	103.
EAST	0.	0.	51.	128.	152.	149.	130.	98.	59.	57.	52.	43.	32.	19.	6.	0.	0.	978.	121.	168.	92.	118.
SOUTHEAST	0.	0.	33.	95.	129.	144.	145.	131.	106.	73.	52.	43.	32.	19.	6.	0.	0.	1009.	123.	171.	93.	120.
HORIZ.	0.	0.	15.	64.	114.	159.	194.	215.	223.	215.	194.	159.	114.	64.	15.	0.	0.	1746.	166.	249.	117.	162.
MONTH	5	H0	3633.	TOD	72.	TOT	68.	KT	.523	KD												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGD	
		0.	0.	11.	24.	36.	63.	86.	100.	105.	100.	86.	63.	36.	24.	11.	0.	745.	115.	148.	94.	113.
SOUTH	0.	0.	11.	24.	36.	46.	54.	61.	92.	115.	128.	129.	116.	89.	46.	0.	0.	949.	127.	169.	101.	126.
SOUTHWEST	0.	0.	11.	24.	36.	46.	54.	59.	61.	98.	127.	146.	149.	132.	81.	0.	0.	1028.	132.	177.	103.	130.
WEST	0.	0.	11.	24.	36.	46.	54.	59.	61.	98.	127.	146.	149.	132.	81.	0.	0.	1028.	132.	177.	103.	130.
NORTHWEST	0.	0.	11.	24.	36.	46.	54.	59.	61.	98.	127.	146.	149.	132.	81.	0.	0.	1028.	132.	177.	103.	130.
NORTH	0.	0.	32.	40.	36.	46.	54.	59.	61.	98.	127.	146.	149.	132.	81.	0.	0.	846.	121.	159.	97.	119.
NORTHEAST	0.	0.	76.	112.	116.	105.	84.	59.	61.	98.	127.	146.	149.	132.	81.	0.	0.	600.	107.	133.	89.	104.
EAST	0.	0.	81.	132.	149.	146.	127.	98.	61.	98.	127.	146.	149.	132.	81.	0.	0.	846.	121.	159.	97.	119.
SOUTHEAST	0.	0.	46.	89.	116.	129.	128.	115.	92.	61.	98.	127.	146.	149.	132.	81.	0.	1028.	132.	177.	103.	130.
HORIZ.	0.	1.	31.	80.	128.	170.	202.	223.	230.	223.	202.	170.	128.	80.	31.	1.	0.	1899.	127.	169.	101.	126.
MONTH	6	H0	3746.	TOD	81.	TOT	77.	KT	.596	KD												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGD	
		0.	2.	13.	26.	38.	60.	85.	101.	107.	101.	85.	60.	38.	26.	13.	2.	753.	124.	157.	103.	123.
SOUTH	0.	2.	13.	26.	38.	48.	56.	61.	94.	122.	139.	142.	129.	101.	56.	3.	0.	1030.	140.	184.	113.	140.
SOUTHWEST	0.	2.	13.	26.	38.	48.	56.	61.	94.	122.	139.	142.	129.	101.	56.	3.	0.	1030.	140.	184.	113.	140.
WEST	0.	2.	13.	26.	38.	48.	56.	61.	94.	122.	139.	142.	129.	101.	56.	3.	0.	1030.	140.	184.	113.	140.
NORTHWEST	0.	2.	13.	26.	38.	48.	56.	61.	94.	122.	139.	142.	129.	101.	56.	3.	0.	1030.	140.	184.	113.	140.
NORTH	0.	3.	46.	53.	46.	48.	56.	61.	94.	122.	139.	142.	129.	101.	56.	3.	0.	1030.	140.	184.	113.	140.
NORTHEAST	0.	4.	102.	140.	142.	126.	99.	66.	63.	61.	56.	48.	38.	26.	13.	2.	0.	985.	137.	180.	111.	137.
EAST	0.	4.	107.	160.	176.	169.	145.	108.	63.	61.	56.	48.	38.	26.	13.	2.	0.	985.	137.	180.	111.	137.
SOUTHEAST	0.	3.	56.	101.	129.	142.	139.	122.	94.	61.	56.	48.	38.	26.	13.	2.	0.	1175.	148.	199.	118.	148.
HORIZ.	0.	3.	41.	96.	151.	198.	235.	258.	266.	258.	235.	198.	151.	96.	41.	3.	0.	2233.	140.	184.	113.	140.



LOCATION STILLWATER, OKLAHOMA LATITUDE 36 DEGREES 9 MINUTES

MONTH 7 HO 3628. TOD 86. TOT 82. KT .604 KD .173

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	11.	24.	36.	68.	94.	112.	117.	112.	94.	68.	36.	24.	11.	0.	0.	809.	133.	169.
SOUTHWEST	0.	0.	11.	24.	36.	47.	55.	62.	101.	131.	149.	151.	137.	106.	54.	0.	0.	1066.	148.	195.
WEST	0.	0.	11.	24.	36.	47.	55.	61.	62.	110.	148.	173.	180.	160.	98.	0.	0.	1167.	154.	206.
NORTHWEST	0.	0.	11.	24.	36.	47.	55.	61.	62.	61.	93.	122.	139.	135.	91.	0.	0.	938.	140.	182.
NORTH	0.	0.	37.	45.	37.	47.	55.	61.	62.	61.	55.	47.	37.	45.	37.	0.	0.	628.	122.	150.
NORTHEAST	0.	0.	91.	135.	139.	122.	93.	61.	62.	61.	55.	47.	36.	24.	11.	0.	0.	938.	140.	182.
EAST	0.	0.	98.	160.	180.	173.	148.	110.	62.	61.	55.	47.	36.	24.	11.	0.	0.	1167.	154.	206.
SOUTHEAST	0.	0.	54.	106.	137.	151.	149.	131.	101.	62.	55.	47.	36.	24.	11.	0.	0.	1066.	148.	195.
HORIZ.	0.	1.	34.	90.	147.	196.	235.	259.	267.	259.	235.	196.	147.	90.	34.	1.	0.	2191.	213.	311.

MONTH 8 HO 3281. TOD 86. TOT 82. KT .607 KD .172

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	6.	19.	53.	90.	119.	138.	144.	138.	119.	90.	53.	19.	6.	0.	0.	994.	148.	195.
SOUTHWEST	0.	0.	6.	19.	32.	44.	52.	78.	120.	151.	169.	170.	152.	111.	35.	0.	0.	1139.	157.	211.
WEST	0.	0.	6.	19.	32.	44.	52.	58.	60.	110.	151.	176.	181.	151.	55.	0.	0.	1095.	154.	206.
NORTHWEST	0.	0.	6.	19.	32.	44.	52.	58.	60.	58.	75.	105.	122.	114.	47.	0.	0.	792.	135.	173.
NORTH	0.	0.	15.	22.	32.	44.	52.	58.	60.	58.	52.	44.	32.	22.	15.	0.	0.	505.	117.	141.
NORTHEAST	0.	0.	47.	114.	122.	105.	75.	58.	60.	58.	52.	44.	32.	19.	6.	0.	0.	792.	135.	173.
EAST	0.	0.	55.	151.	181.	176.	151.	110.	60.	58.	52.	44.	32.	19.	6.	0.	0.	1095.	154.	206.
SOUTHEAST	0.	0.	35.	111.	152.	170.	169.	151.	120.	78.	52.	44.	32.	19.	6.	0.	0.	1139.	157.	211.
HORIZ.	0.	0.	15.	70.	129.	182.	223.	248.	257.	248.	223.	182.	129.	70.	15.	0.	0.	1992.	210.	305.

MONTH 9 HO 2746. TOD 77. TOT 74. KT .599 KD .174

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SAG/ALL DAY SATGS
SOUTH	0.	0.	0.	28.	73.	114.	146.	166.	173.	166.	146.	114.	73.	28.	0.	0.	0.	1229.	161.	225.
SOUTHWEST	0.	0.	0.	12.	26.	37.	47.	96.	138.	170.	187.	185.	161.	100.	0.	0.	0.	1160.	156.	217.
WEST	0.	0.	0.	12.	26.	37.	46.	52.	54.	105.	146.	170.	169.	121.	0.	0.	0.	938.	141.	190.
NORTHWEST	0.	0.	0.	12.	26.	37.	46.	52.	54.	52.	46.	77.	93.	77.	0.	0.	0.	575.	117.	147.
NORTH	0.	0.	0.	12.	26.	37.	46.	52.	54.	52.	46.	37.	26.	12.	0.	0.	0.	402.	105.	126.
NORTHEAST	0.	0.	0.	77.	93.	77.	46.	52.	54.	52.	46.	37.	26.	12.	0.	0.	0.	575.	117.	147.
EAST	0.	0.	0.	121.	169.	170.	146.	105.	54.	52.	46.	37.	26.	12.	0.	0.	0.	938.	141.	190.
SOUTHEAST	0.	0.	0.	100.	161.	185.	187.	170.	138.	96.	47.	37.	26.	12.	0.	0.	0.	1160.	156.	217.
HORIZ.	0.	0.	0.	41.	99.	153.	194.	220.	229.	194.	153.	99.	41.	0.	0.	0.	0.	1643.	189.	275.

LOCATION STILLWATER, OKLAHOMA LATITUDE 36 DEGREES 9 MINUTES

MONTH 10 HO 2148. TOD 68. TOT 63. KT .581 KD .177

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD
SOUTH	0.	0.	0.	19.	81.	129.	163.	185.	192.	185.	163.	129.	81.	19.	0.	0.	0.	1346.	162.	240.
SOUTHWEST	0.	0.	0.	5.	18.	29.	60.	108.	149.	179.	193.	186.	150.	46.	0.	0.	0.	1124.	147.	211.
WEST	0.	0.	0.	5.	18.	29.	38.	44.	46.	44.	132.	152.	141.	49.	0.	0.	0.	749.	120.	163.
NORTHWEST	0.	0.	0.	5.	18.	29.	38.	44.	46.	44.	38.	46.	60.	26.	0.	0.	0.	395.	95.	118.
NORTH	0.	0.	0.	5.	18.	29.	38.	44.	46.	44.	38.	29.	18.	5.	0.	0.	0.	315.	90.	108.
NORTHEAST	0.	0.	0.	26.	60.	46.	38.	44.	46.	44.	38.	29.	18.	5.	0.	0.	0.	395.	95.	118.
EAST	0.	0.	0.	49.	141.	152.	132.	94.	46.	44.	38.	29.	18.	5.	0.	0.	0.	749.	120.	163.
SOUTHEAST	0.	0.	0.	46.	150.	186.	193.	179.	149.	108.	60.	29.	18.	5.	0.	0.	0.	1124.	147.	211.
HORIZ.	0.	0.	0.	12.	64.	115.	156.	182.	190.	182.	156.	115.	64.	12.	0.	0.	0.	1248.	155.	227.

MONTH 11 HO 1628. TOD 53. TOT 50. KT .548 KD .181

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD
SOUTH	0.	0.	0.	0.	69.	125.	162.	184.	192.	184.	162.	125.	69.	0.	0.	0.	0.	1273.	151.	232.
SOUTHWEST	0.	0.	0.	0.	11.	22.	66.	109.	147.	172.	182.	168.	112.	0.	0.	0.	0.	988.	129.	192.
WEST	0.	0.	0.	0.	11.	22.	30.	36.	38.	80.	112.	125.	96.	0.	0.	0.	0.	550.	95.	130.
NORTHWEST	0.	0.	0.	0.	11.	22.	30.	36.	38.	36.	30.	22.	30.	0.	0.	0.	0.	255.	72.	88.
NORTH	0.	0.	0.	0.	11.	22.	30.	36.	38.	36.	30.	22.	11.	0.	0.	0.	0.	236.	71.	86.
NORTHEAST	0.	0.	0.	0.	30.	22.	30.	36.	38.	36.	30.	22.	11.	0.	0.	0.	0.	255.	72.	88.
EAST	0.	0.	0.	0.	96.	125.	112.	80.	38.	36.	30.	22.	11.	0.	0.	0.	0.	550.	95.	130.
SOUTHEAST	0.	0.	0.	0.	112.	168.	182.	172.	147.	109.	66.	22.	11.	0.	0.	0.	0.	988.	129.	192.
HORIZ.	0.	0.	0.	0.	33.	80.	117.	141.	149.	141.	117.	80.	33.	0.	0.	0.	0.	891.	122.	178.

MONTH 12 HO 1428. TOD 44. TOT 41. KT .544 KD .182

ORIENTATION

	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD
SOUTH	0.	0.	0.	0.	59.	124.	164.	186.	194.	186.	164.	124.	59.	0.	0.	0.	0.	1259.	146.	228.
SOUTHWEST	0.	0.	0.	0.	8.	25.	68.	111.	147.	172.	180.	162.	92.	0.	0.	0.	0.	963.	122.	185.
WEST	0.	0.	0.	0.	8.	19.	27.	33.	35.	76.	106.	116.	76.	0.	0.	0.	0.	495.	84.	117.
NORTHWEST	0.	0.	0.	0.	8.	19.	27.	33.	35.	33.	27.	19.	20.	0.	0.	0.	0.	220.	62.	76.
NORTH	0.	0.	0.	0.	8.	19.	27.	33.	35.	33.	27.	19.	8.	0.	0.	0.	0.	208.	61.	74.
NORTHEAST	0.	0.	0.	0.	20.	19.	27.	33.	35.	33.	27.	19.	8.	0.	0.	0.	0.	220.	62.	76.
EAST	0.	0.	0.	0.	76.	116.	106.	76.	35.	33.	27.	19.	8.	0.	0.	0.	0.	495.	84.	117.
SOUTHEAST	0.	0.	0.	0.	92.	162.	180.	172.	147.	111.	68.	25.	8.	0.	0.	0.	0.	963.	122.	185.
HORIZ.	0.	0.	0.	0.	23.	67.	104.	127.	135.	127.	104.	67.	23.	0.	0.	0.	0.	778.	107.	158.

LOCATION STILLWATER, OKLAHOMA LATITUDE 36 DEGREES 9 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	124.	130.	127.	116.	115.	124.	133.	148.	161.	162.	151.	146.	136.
SOUTHWEST	106.	117.	123.	123.	127.	140.	148.	157.	156.	147.	129.	122.	133.
WEST	79.	95.	110.	121.	132.	148.	154.	154.	141.	120.	95.	84.	119.
NORTHWEST	60.	73.	89.	107.	121.	137.	140.	135.	117.	95.	72.	62.	101.
NORTH	59.	68.	79.	93.	107.	120.	122.	117.	105.	90.	71.	61.	91.
NORTHEAST	60.	73.	89.	107.	121.	137.	140.	135.	117.	95.	72.	62.	101.
EAST	79.	95.	110.	121.	132.	148.	154.	154.	141.	120.	95.	84.	119.
SOUTHEAST	106.	117.	123.	123.	127.	140.	148.	157.	156.	147.	129.	122.	133.
HORIZ.	102.	126.	152.	166.	182.	208.	213.	210.	189.	155.	122.	107.	161.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	192.	198.	187.	158.	148.	157.	169.	195.	225.	240.	232.	228.	194.
SOUTHWEST	160.	175.	180.	171.	169.	184.	195.	211.	217.	211.	192.	185.	188.
WEST	110.	135.	157.	168.	177.	199.	206.	206.	190.	163.	130.	117.	163.
NORTHWEST	76.	95.	119.	142.	159.	180.	182.	173.	147.	118.	88.	76.	130.
NORTH	74.	86.	100.	117.	133.	150.	150.	141.	126.	108.	86.	74.	112.
NORTHEAST	76.	95.	119.	142.	159.	180.	182.	173.	147.	118.	88.	76.	130.
EAST	110.	135.	157.	168.	177.	199.	206.	206.	190.	163.	130.	117.	163.
SOUTHEAST	160.	175.	180.	171.	169.	184.	195.	211.	217.	211.	192.	185.	188.
HORIZ.	152.	192.	232.	249.	267.	305.	311.	305.	275.	227.	178.	158.	238.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	72.	80.	87.	89.	94.	103.	110.	116.	116.	107.	90.	81.	95.
SOUTHWEST	64.	75.	85.	93.	101.	113.	119.	121.	113.	99.	81.	72.	95.
WEST	53.	64.	78.	92.	103.	118.	122.	119.	106.	87.	67.	57.	89.
NORTHWEST	45.	55.	68.	84.	97.	111.	114.	109.	93.	76.	58.	48.	80.
NORTH	45.	52.	63.	77.	89.	101.	104.	99.	88.	74.	57.	47.	75.
NORTHEAST	45.	55.	68.	84.	97.	111.	114.	109.	93.	76.	58.	48.	80.
EAST	53.	64.	78.	92.	103.	118.	122.	119.	106.	87.	67.	57.	89.
SOUTHEAST	64.	75.	85.	93.	101.	113.	119.	121.	113.	99.	81.	72.	95.
HORIZ.	63.	79.	99.	117.	133.	154.	157.	150.	130.	103.	78.	66.	111.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	100.	112.	117.	112.	113.	123.	131.	142.	148.	142.	124.	114.	123.
SOUTHWEST	87.	101.	113.	120.	126.	140.	146.	151.	144.	129.	107.	97.	122.
WEST	66.	83.	101.	118.	130.	148.	153.	148.	130.	107.	82.	70.	111.
NORTHWEST	52.	65.	82.	103.	119.	137.	139.	130.	109.	86.	64.	54.	95.
NORTH	51.	60.	73.	90.	104.	119.	120.	112.	98.	82.	63.	53.	86.
NORTHEAST	52.	65.	82.	103.	119.	137.	139.	130.	109.	86.	64.	54.	95.
EAST	66.	83.	101.	118.	130.	148.	153.	148.	130.	107.	82.	70.	111.
SOUTHEAST	87.	101.	113.	120.	126.	140.	146.	151.	144.	129.	107.	97.	122.
HORIZ.	84.	109.	139.	162.	183.	212.	214.	202.	173.	136.	102.	86.	150.

LOCATION	TAMPA, FLORIDA	LATITUDE	27 DEGREES	54 MINUTES
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MONTH	1	H0	2076.	TOD	64.	TOT	61.	HOURLY SOLAR RADIATION								KT	.605	KD	.173	DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY	
								7	8	9	10	11	12	13	14						15	16	17	18
ORIENTATION																								
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
	SOUTH	0.	0.	0.	12.	96.	145.	179.	199.	205.	199.	179.	145.	96.	12.	0.	0.	0.	1464.	171.	259.	108.	147.	
	SOUTHWEST	0.	0.	0.	3.	16.	28.	69.	117.	159.	190.	206.	201.	160.	23.	0.	0.	0.	1171.	150.	220.	99.	130.	
	WEST	0.	0.	0.	3.	16.	28.	38.	44.	46.	96.	135.	155.	140.	22.	0.	0.	0.	724.	117.	160.	85.	104.	
	NORTHWEST	0.	0.	0.	3.	16.	28.	38.	44.	46.	44.	38.	36.	48.	10.	0.	0.	0.	351.	90.	111.	73.	82.	
	NORTH	0.	0.	0.	3.	16.	28.	38.	44.	46.	44.	38.	28.	16.	3.	0.	0.	0.	305.	86.	105.	71.	79.	
	NORTHEAST	0.	0.	0.	10.	48.	36.	38.	44.	46.	44.	38.	28.	16.	3.	0.	0.	0.	351.	90.	111.	73.	82.	
	EAST	0.	0.	0.	22.	140.	155.	135.	96.	46.	44.	38.	28.	16.	3.	0.	0.	0.	724.	117.	160.	85.	104.	
	SOUTHEAST	0.	0.	0.	23.	160.	201.	206.	190.	159.	117.	69.	28.	16.	3.	0.	0.	0.	1171.	150.	220.	99.	130.	
	HORIZ.	0.	0.	0.	6.	59.	116.	160.	188.	197.	148.	160.	116.	59.	6.	0.	0.	0.	1254.	156.	231.	102.	135.	

MONTH	2	HO	2549.	TOD	66.	TOT	63.	KT	.600	KD	.174												
ORIENTATION																							
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION					SAG/DAYTIME SAG/ALL DAY	
HOURLY SOLAR RADIATION												SAGS		SATGD		SATS		SATGD		SATGS		SATGD	
SOUTH	0.	0.	0.	33.	87.	128.	158.	176.	183.	176.	158.	128.	87.	33.	0.	0.	0.	1345.	158.	233.	106.	141.	
SOUTHWEST	0.	0.	0.	8.	22.	35.	55.	102.	145.	177.	195.	194.	168.	86.	0.	0.	0.	1186.	147.	213.	101.	132.	
WEST	0.	0.	0.	8.	22.	35.	45.	51.	53.	104.	144.	168.	163.	93.	0.	0.	0.	886.	126.	176.	91.	115.	
NORTHWEST	0.	0.	0.	8.	22.	35.	45.	51.	53.	51.	45.	63.	76.	50.	0.	0.	0.	500.	100.	128.	79.	92.	
NORTH	0.	0.	0.	8.	22.	35.	45.	51.	53.	51.	45.	35.	22.	8.	0.	0.	0.	376.	91.	112.	75.	85.	
NORTHEAST	0.	0.	0.	50.	78.	63.	45.	51.	53.	51.	45.	35.	22.	8.	0.	0.	0.	500.	100.	128.	79.	92.	
EAST	0.	0.	0.	93.	163.	168.	144.	104.	53.	51.	45.	35.	22.	8.	0.	0.	0.	886.	126.	176.	91.	115.	
SOUTHEAST	0.	0.	0.	86.	168.	194.	195.	177.	145.	102.	55.	35.	22.	8.	0.	0.	0.	1186.	147.	213.	101.	132.	
HORIZ.	0.	0.	0.	23.	85.	142.	187.	215.	225.	215.	187.	142.	85.	23.	0.	0.	0.	1532.	171.	256.	112.	152.	

MONTH	3	H0	3016.	T00	69.	T0T	66.	KT	.606	KD	.173						
ORIENTATION																	
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HOURLY SOLAR RADIATION																	
SOUTH	0.	0.	0.	28.	68.	104.	132.	150.	156.	150.	132.	104.	68.	28.	0.	0.	0.
SOUTHWEST	0.	0.	0.	14.	28.	41.	51.	85.	128.	161.	180.	183.	164.	110.	0.	0.	0.
WEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	111.	152.	178.	180.	136.	0.	0.	0.
NORTHWEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	57.	65.	93.	107.	90.	0.	0.	0.
NORTH	0.	0.	0.	14.	28.	41.	51.	57.	59.	57.	51.	41.	28.	14.	0.	0.	0.
NORTHEAST	0.	0.	0.	90.	107.	93.	65.	57.	59.	57.	51.	41.	28.	14.	0.	0.	0.
EAST	0.	0.	0.	136.	180.	178.	152.	111.	59.	57.	51.	41.	28.	14.	0.	0.	0.
SOUTHEAST	0.	0.	0.	110.	164.	183.	180.	161.	128.	85.	51.	41.	28.	14.	0.	0.	0.
HORIZ.	0.	0.	0.	47.	112.	170.	215.	243.	253.	243.	215.	170.	112.	47.	0.	0.	0.
DAILY TOTAL RADIATION																	
SOUTH	0.	0.	0.	28.	68.	104.	132.	150.	156.	150.	132.	104.	68.	28.	0.	0.	0.
SOUTHWEST	0.	0.	0.	14.	28.	41.	51.	85.	128.	161.	180.	183.	164.	110.	0.	0.	0.
WEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	111.	152.	178.	180.	136.	0.	0.	0.
NORTHWEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	57.	65.	93.	107.	90.	0.	0.	0.
NORTH	0.	0.	0.	14.	28.	41.	51.	57.	59.	57.	51.	41.	28.	14.	0.	0.	0.
NORTHEAST	0.	0.	0.	90.	107.	93.	65.	57.	59.	57.	51.	41.	28.	14.	0.	0.	0.
EAST	0.	0.	0.	136.	180.	178.	152.	111.	59.	57.	51.	41.	28.	14.	0.	0.	0.
SOUTHEAST	0.	0.	0.	110.	164.	183.	180.	161.	128.	85.	51.	41.	28.	14.	0.	0.	0.
HORIZ.	0.	0.	0.	47.	112.	170.	215.	243.	253.	243.	215.	170.	112.	47.	0.	0.	0.
SAG/DAYTIME SAG/ALL DAY																	
SOUTH	0.	0.	0.	28.	68.	104.	132.	150.	156.	150.	132.	104.	68.	28.	0.	0.	0.
SOUTHWEST	0.	0.	0.	14.	28.	41.	51.	85.	128.	161.	180.	183.	164.	110.	0.	0.	0.
WEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	111.	152.	178.	180.	136.	0.	0.	0.
NORTHWEST	0.	0.	0.	14.	28.	41.	51.	57.	59.	57.	65.	93.	107.	90.	0.	0.	0.
NORTH	0.	0.	0.	14.	28.	41.	51.	57.	59.	57.	51.	41.	28.	14.	0.	0.	0.
NORTHEAST	0.	0.	0.	90.	107.	93.	65.	57.	59.	57.	51.	41.	28.	14.	0.	0.	0.
EAST	0.	0.	0.	136.	180.	178.	152.	111.	59.	57.	51.	41.	28.	14.	0.	0.	0.
SOUTHEAST	0.	0.	0.	110.	164.	183.	180.	161.	128.	85.	51.	41.	28.	14.	0.	0.	0.
HORIZ.	0.	0.	0.	47.	112.	170.	215.	243.	253.	243.	215.	170.	112.	47.	0.	0.	0.



LOCATION		TAMPA, FLORIDA		LATITUDE		27 DEGREES		54 MINUTES								
MONTH	4	HO	3409.	TOD	74.	TOT	71.	KT	.602	KD	.174					
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	5.	19.	41.	73.	98.	114.	119.	114.	98.	73.	41.	19.	5.	0.
SOUTHWEST	0.	0.	5.	19.	33.	46.	55.	62.	103.	135.	154.	158.	144.	106.	26.	0.
WEST	0.	0.	5.	19.	33.	46.	55.	61.	63.	112.	152.	177.	181.	151.	42.	0.
NORTHWEST	0.	0.	5.	19.	33.	46.	55.	61.	63.	61.	94.	120.	132.	119.	36.	0.
NORTH	0.	0.	12.	28.	33.	46.	55.	61.	63.	61.	55.	46.	33.	28.	12.	0.
NORTHEAST	0.	0.	36.	119.	132.	120.	94.	61.	63.	61.	55.	46.	33.	19.	5.	0.
EAST	0.	0.	42.	151.	181.	177.	152.	112.	63.	61.	55.	46.	33.	19.	5.	0.
SOUTHEAST	0.	0.	26.	106.	144.	158.	154.	135.	103.	62.	55.	46.	33.	19.	5.	0.
HORIZ.	0.	0.	11.	69.	132.	188.	232.	259.	268.	259.	232.	188.	132.	69.	11.	0.
DAILY TOTAL RADIATION												817.	123.	163.	98.	119.
SAG/DAYTIME SATGS												1045.	137.	188.	105.	132.
SAG/ALL DAY SATGD												1099.	140.	194.	107.	136.
SOUTH												844.	125.	166.	99.	121.
SOUTHWEST												533.	106.	132.	89.	103.
WEST												844.	125.	166.	99.	121.
NORTHWEST												844.	125.	166.	99.	121.
NORTH												844.	125.	166.	99.	121.
NORTHEAST												1099.	140.	194.	107.	136.
EAST												1045.	137.	188.	105.	132.
SOUTHEAST												2052.	197.	297.	137.	191.
HORIZ.																
MONTH	5	HO	3611.	TOD	79.	TOT	76.	KT	.620	KD	.169					
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	8.	22.	36.	48.	72.	87.	93.	87.	72.	48.	36.	22.	8.	0.
SOUTHWEST	0.	0.	8.	22.	36.	47.	57.	62.	84.	116.	136.	141.	130.	100.	43.	0.
WEST	0.	0.	8.	22.	36.	47.	57.	62.	64.	113.	154.	179.	185.	161.	81.	0.
NORTHWEST	0.	0.	8.	22.	36.	47.	57.	62.	64.	81.	114.	140.	153.	141.	76.	0.
NORTH	0.	0.	32.	52.	52.	47.	57.	62.	64.	62.	57.	47.	52.	52.	32.	0.
NORTHEAST	0.	0.	76.	141.	153.	140.	114.	81.	64.	62.	57.	47.	36.	22.	8.	0.
EAST	0.	0.	81.	161.	185.	179.	154.	113.	64.	62.	57.	47.	36.	22.	8.	0.
SOUTHEAST	0.	0.	43.	100.	130.	141.	136.	116.	84.	62.	57.	47.	36.	22.	8.	0.
HORIZ.	0.	0.	24.	85.	148.	203.	246.	273.	282.	273.	246.	203.	148.	85.	24.	0.
DAILY TOTAL RADIATION												641.	118.	148.	98.	115.
SAG/DAYTIME SATGS												983.	139.	185.	110.	136.
SAG/ALL DAY SATGD												1170.	151.	205.	117.	147.
SOUTH												1002.	140.	187.	111.	137.
SOUTHWEST												667.	120.	151.	99.	117.
WEST												1002.	140.	187.	111.	137.
NORTHWEST												1170.	151.	205.	117.	147.
NORTH												983.	139.	185.	110.	136.
NORTHEAST												2240.	216.	320.	153.	212.
EAST																
SOUTHEAST																
HORIZ.																
MONTH	6	HO	3674.	TOD	83.	TOT	80.	KT	.583	KD	.176					
ORIENTATION																
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	10.	23.	37.	48.	60.	74.	79.	74.	60.	48.	37.	23.	10.	0.
SOUTHWEST	0.	0.	10.	23.	37.	48.	57.	62.	75.	103.	120.	124.	114.	87.	41.	0.
WEST	0.	0.	10.	23.	37.	48.	57.	62.	64.	107.	142.	164.	168.	147.	81.	0.
NORTHWEST	0.	0.	10.	23.	37.	48.	57.	62.	64.	86.	114.	136.	146.	135.	80.	0.
NORTH	0.	0.	37.	57.	59.	57.	57.	62.	64.	62.	57.	59.	57.	57.	37.	0.
NORTHEAST	0.	0.	80.	135.	146.	136.	114.	86.	64.	62.	57.	48.	37.	23.	10.	0.
EAST	0.	0.	81.	147.	168.	164.	142.	107.	64.	62.	57.	48.	37.	23.	10.	0.
SOUTHEAST	0.	0.	41.	87.	114.	124.	120.	103.	75.	62.	57.	48.	37.	23.	10.	0.
HORIZ.	0.	0.	29.	85.	143.	193.	232.	257.	265.	257.	232.	193.	143.	85.	29.	0.
DAILY TOTAL RADIATION												584.	118.	144.	100.	116.
SAG/DAYTIME SATGS												899.	137.	178.	111.	135.
SAG/ALL DAY SATGD												1111.	149.	200.	118.	148.
SOUTH												997.	142.	188.	114.	141.
SOUTHWEST												722.	126.	159.	105.	124.
WEST												997.	142.	188.	114.	141.
NORTHWEST												1111.	149.	200.	118.	148.
NORTH												899.	137.	178.	111.	135.
NORTHEAST												2142.	211.	309.	154.	210.
EAST																
SOUTHEAST																
HORIZ.																

LOCATION	TAMPA, FLORIDA	LATITUDE	27 DEGREES	54 MINUTES
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MONTH	7	HO	3604.	TOD	84.	TOT	82.	KT	548	KD	.181											
ORIENTATION																						
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
HOURLY SOLAR RADIATION																						
SOUTH	0.	0.	9.	22.	35.	47.	68.	81.	86.	81.	68.	47.	35.	22.	9.	0.	0.	611.	121.	150.	103.	119.
SOUTHWEST	0.	0.	9.	22.	35.	47.	56.	61.	79.	105.	120.	123.	111.	84.	35.	0.	0.	888.	138.	179.	112.	135.
WEST	0.	0.	9.	22.	35.	47.	56.	61.	63.	103.	135.	154.	156.	133.	65.	0.	0.	1039.	147.	195.	117.	144.
NORTHWEST	0.	0.	9.	22.	35.	47.	56.	61.	63.	77.	103.	122.	130.	118.	61.	0.	0.	905.	139.	181.	113.	136.
NORTH	0.	0.	27.	46.	49.	47.	56.	61.	63.	61.	56.	47.	49.	46.	27.	0.	0.	636.	123.	152.	103.	120.
NORTHEAST	0.	0.	61.	118.	130.	122.	103.	77.	63.	61.	56.	47.	35.	22.	9.	0.	0.	905.	139.	181.	113.	136.
EAST	0.	0.	65.	133.	156.	154.	135.	103.	63.	61.	56.	47.	35.	22.	9.	0.	0.	1039.	147.	195.	117.	144.
SOUTHEAST	0.	0.	35.	84.	111.	123.	120.	105.	79.	61.	56.	47.	35.	22.	9.	0.	0.	888.	138.	179.	112.	135.
HORIZ.	0.	0.	22.	76.	131.	179.	216.	240.	248.	240.	216.	179.	131.	76.	22.	0.	0.	1976.	204.	296.	149.	201.



## LOCATION TAMPA, FLORIDA

LATITUDE 27 DEGREES 54 MINUTES

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	171.	158.	141.	123.	118.	118.	121.	132.	151.	164.	173.	173.	145.
SOUTHWEST	150.	147.	142.	137.	139.	137.	138.	144.	152.	152.	152.	149.	145.
WEST	117.	126.	133.	140.	151.	149.	147.	146.	144.	134.	121.	114.	135.
NORTHWEST	90.	100.	111.	125.	140.	142.	139.	133.	125.	110.	95.	88.	117.
NORTH	86.	91.	97.	106.	120.	126.	123.	117.	112.	110.	92.	86.	105.
NORTHEAST	90.	100.	111.	125.	140.	142.	139.	133.	125.	110.	95.	88.	117.
EAST	117.	126.	133.	140.	151.	149.	147.	146.	144.	134.	121.	114.	135.
SOUTHEAST	150.	147.	142.	137.	139.	137.	138.	144.	152.	153.	152.	149.	145.
HORIZ.	156.	171.	186.	197.	216.	211.	204.	200.	194.	176.	159.	149.	185.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	259.	233.	199.	163.	148.	144.	150.	169.	202.	234.	257.	261.	202.
SOUTHWEST	220.	213.	202.	188.	185.	178.	179.	189.	205.	215.	220.	218.	201.
WEST	160.	176.	186.	194.	205.	200.	195.	194.	191.	180.	162.	153.	183.
NORTHWEST	111.	128.	146.	166.	187.	188.	181.	171.	157.	136.	115.	106.	149.
NORTH	105.	112.	120.	132.	151.	159.	152.	143.	135.	123.	110.	103.	129.
NORTHEAST	111.	128.	146.	166.	187.	188.	181.	171.	157.	136.	115.	106.	149.
EAST	160.	176.	186.	194.	205.	200.	195.	194.	191.	180.	162.	153.	183.
SOUTHEAST	220.	213.	202.	188.	185.	178.	179.	189.	205.	215.	220.	218.	201.
HORIZ.	231.	256.	281.	297.	320.	309.	296.	289.	280.	257.	231.	217.	272.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	108.	106.	102.	98.	98.	100.	103.	108.	114.	115.	112.	109.	106.
SOUTHWEST	99.	101.	103.	105.	110.	111.	112.	114.	115.	110.	103.	98.	107.
WEST	85.	91.	98.	107.	117.	118.	117.	115.	111.	101.	89.	83.	103.
NORTHWEST	73.	79.	87.	99.	111.	114.	113.	108.	102.	90.	78.	72.	94.
NORTH	71.	75.	80.	89.	99.	105.	103.	100.	95.	86.	76.	72.	88.
NORTHEAST	73.	79.	87.	99.	111.	114.	113.	108.	102.	90.	78.	72.	94.
EAST	85.	91.	98.	107.	117.	118.	117.	115.	111.	101.	89.	83.	103.
SOUTHEAST	99.	101.	103.	105.	110.	111.	112.	114.	115.	110.	103.	98.	107.
HORIZ.	102.	112.	125.	137.	153.	154.	149.	144.	136.	121.	106.	98.	128.

## ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	147.	141.	131.	119.	115.	116.	119.	127.	140.	148.	149.	146.	133.
SOUTHWEST	130.	132.	133.	132.	136.	135.	135.	138.	142.	139.	132.	128.	134.
WEST	104.	115.	125.	136.	147.	148.	144.	141.	135.	123.	107.	100.	127.
NORTHWEST	82.	92.	105.	121.	137.	141.	136.	128.	118.	102.	87.	80.	111.
NORTH	79.	85.	92.	103.	117.	124.	120.	113.	107.	96.	84.	79.	100.
NORTHEAST	82.	92.	105.	121.	137.	141.	136.	128.	118.	102.	87.	80.	111.
EAST	104.	115.	125.	136.	147.	148.	144.	141.	135.	123.	107.	100.	127.
SOUTHEAST	130.	132.	133.	132.	136.	135.	135.	138.	142.	139.	132.	128.	134.
HORIZ.	135.	152.	172.	191.	212.	210.	201.	192.	179.	159.	137.	127.	172.



LOCATION TUCSON, ARIZONA LATITUDE 32 DEGREES 7 MINUTES

MONTH	1	HO	1856.	TOD	54.	TOT	50.	HOURLY SOLAR RADIATION								KT	.648	KD	.162				
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD	
SOUTH	0.	0.	0.	2.	99.	161.	201.	226.	234.	226.	201.	161.	99.	2.	0.	0.	0.	1611.	175.	273.	101.	144.	
SOUTHWEST	0.	0.	0.	1.	13.	25.	75.	130.	178.	213.	230.	220.	166.	2.	0.	0.	0.	1254.	148.	225.	90.	123.	
WEST	0.	0.	0.	1.	13.	25.	34.	40.	42.	99.	143.	166.	143.	2.	0.	0.	0.	710.	107.	150.	72.	91.	
NORTHWEST	0.	0.	0.	0.	1.	13.	25.	34.	40.	42.	40.	34.	29.	44.	2.	0.	0.	305.	77.	95.	59.	67.	
NORTH	0.	0.	0.	1.	13.	25.	34.	40.	42.	40.	34.	25.	13.	1.	0.	0.	0.	270.	74.	91.	58.	65.	
NORTHEAST	0.	0.	0.	2.	44.	29.	34.	40.	42.	40.	34.	25.	13.	1.	0.	0.	0.	305.	77.	95.	59.	67.	
EAST	0.	0.	0.	2.	143.	166.	143.	99.	42.	40.	34.	25.	13.	1.	0.	0.	0.	710.	107.	150.	72.	91.	
SOUTHEAST	0.	0.	0.	2.	166.	220.	230.	213.	178.	130.	75.	25.	13.	1.	0.	0.	0.	1254.	148.	225.	90.	123.	
HORIZ.	0.	0.	0.	2.	51.	109.	156.	185.	195.	185.	156.	109.	51.	2.	0.	0.	0.	1201.	144.	218.	88.	120.	

MONTH	2	HO	2368.	TOD	57.	TOT	53.	KT	.646	KD	.163												
ORIENTATION												HOURLY SOLAR RADIATION											
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	0.	31.	96.	145.	181.	203.	210.	203.	181.	145.	96.	31.	0.	0.	0.	1523.	163.	249.	102.	142.	
SOUTHWEST	0.	0.	0.	6.	20.	32.	60.	115.	163.	200.	220.	218.	185.	82.	0.	0.	0.	1301.	147.	221.	95.	129.	
WEST	0.	0.	0.	6.	20.	32.	42.	48.	50.	108.	154.	182.	177.	88.	0.	0.	0.	907.	120.	171.	82.	106.	
NORTHWEST	0.	0.	0.	6.	20.	32.	42.	48.	50.	48.	42.	58.	77.	46.	0.	0.	0.	469.	90.	116.	68.	81.	
NORTH	0.	0.	0.	6.	20.	32.	42.	48.	50.	48.	42.	32.	20.	6.	0.	0.	0.	346.	81.	101.	64.	73.	
NORTHEAST	0.	0.	0.	46.	77.	58.	42.	48.	50.	48.	42.	32.	20.	6.	0.	0.	0.	469.	90.	116.	68.	81.	
EAST	0.	0.	0.	88.	177.	182.	154.	108.	50.	48.	42.	32.	20.	6.	0.	0.	0.	907.	120.	171.	82.	106.	
SOUTHEAST	0.	0.	0.	82.	185.	218.	220.	200.	163.	115.	60.	32.	20.	6.	0.	0.	0.	1301.	147.	221.	95.	129.	
HORIZ.	0.	0.	0.	19.	82.	142.	189.	219.	229.	219.	189.	142.	82.	19.	0.	0.	0.	1531.	163.	250.	102.	142.	

MONTH	3	HO	2893.	TOD	62.	TOT	58.	KT	.000	KD	.179													DAILY TOTAL RADIATION		SAG/DAYTIME SATGS SATGD		SAG/ALL DAY SATGS SATGD						
ORIENTATION												4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
SOUTH												0.	0.	0.	11.	20.	29.	35.	39.	41.	39.	35.	29.	20.	11.	0.	0.	0.	309.	82.	98.	68.	76.	
SOUTHWEST												0.	0.	0.	11.	20.	29.	35.	39.	41.	39.	35.	29.	20.	11.	0.	0.	0.	309.	82.	98.	68.	76.	
WEST												0.	0.	0.	11.	20.	29.	35.	39.	41.	39.	35.	29.	20.	11.	0.	0.	0.	309.	82.	98.	68.	76.	
NORTHWEST												0.	0.	0.	11.	20.	29.	35.	39.	41.	39.	35.	29.	20.	11.	0.	0.	0.	309.	82.	98.	68.	76.	
NORTH												0.	0.	0.	11.	20.	29.	35.	39.	41.	39.	35.	29.	20.	11.	0.	0.	0.	309.	82.	98.	68.	76.	
NORTHEAST												0.	0.	0.	11.	20.	29.	35.	39.	41.	39.	35.	29.	20.	11.	0.	0.	0.	309.	82.	98.	68.	76.	
EAST												0.	0.	0.	11.	20.	29.	35.	39.	41.	39.	35.	29.	20.	11.	0.	0.	0.	309.	82.	98.	68.	76.	
SOUTHEAST												0.	0.	0.	11.	20.	29.	35.	39.	41.	39.	35.	29.	20.	11.	0.	0.	0.	309.	82.	98.	68.	76.	
HORIZ.												0.	0.	0.	18.	34.	48.	59.	65.	68.	65.	59.	48.	34.	18.	0.	0.	0.	515.	95.	122.	74.	88.	



ORIENTATION	HOURLY SOLAR RADIATION																
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	32.	83.	130.	167.	190.	198.	190.	167.	130.	83.	32.	0.	0.	0.
SOUTHWEST	0.	0.	0.	12.	26.	38.	48.	101.	156.	199.	225.	228.	202.	130.	0.	0.	0.
WEST	0.	0.	0.	12.	26.	38.	48.	54.	56.	124.	179.	215.	218.	159.	0.	0.	0.
NORTHWEST	0.	0.	0.	12.	26.	38.	48.	54.	56.	54.	57.	98.	121.	102.	0.	0.	0.
NORTH	0.	0.	0.	12.	26.	38.	48.	54.	56.	54.	48.	38.	26.	12.	0.	0.	0.
NORTHEAST	0.	0.	0.	102.	121.	98.	57.	54.	56.	54.	48.	38.	26.	12.	0.	0.	0.
EAST	0.	0.	0.	159.	218.	215.	179.	124.	56.	54.	48.	38.	26.	12.	0.	0.	0.
SOUTHEAST	0.	0.	0.	130.	202.	228.	225.	199.	156.	101.	48.	38.	26.	12.	0.	0.	0.
NORTH.	0.	0.	0.	49.	122.	189.	242.	275.	286.	275.	242.	189.	122.	49.	0.	0.	0.

LOCATION	TUCSON, ARIZONA				LATITUDE				32 DEGREES				7 MINUTES																																												
MONTH	10	HO	2333.	TOD	74.	TOT	70.	KT	.672	KD	.156																																														
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SATGS SATGD				SAG/ALL DAY SATGS SATGD																															
SOUTH	0.	0.	0.	29.	99.	152.	190.	214.	222.	214.	190.	152.	99.	29.	0.	0.	0.	1589.				184.				274.				121.				162.																							
SOUTHWEST	0.	0.	0.	6.	19.	32.	62.	120.	171.	210.	231.	228.	190.	75.	0.	0.	0.	1345.				167.				244.				113.				148.																							
WEST	0.	0.	0.	6.	19.	32.	41.	47.	49.	111.	161.	190.	181.	81.	0.	0.	0.	918.				138.				190.				99.				123.																							
NORTHWEST	0.	0.	0.	6.	19.	32.	41.	47.	49.	47.	41.	58.	77.	43.	0.	0.	0.	461.				106.				132.				84.				96.																							
NORTH	0.	0.	0.	6.	19.	32.	41.	47.	49.	47.	41.	32.	19.	6.	0.	0.	0.	339.				97.				117.				80.				89.																							
NORTHEAST	0.	0.	0.	43.	77.	58.	41.	47.	49.	47.	41.	32.	19.	6.	0.	0.	0.	461.				106.				132.				84.				96.																							
EAST	0.	0.	0.	81.	181.	190.	161.	111.	49.	47.	41.	32.	19.	6.	0.	0.	0.	918.				138.				190.				99.				123.																							
SOUTHEAST	0.	0.	0.	75.	190.	228.	231.	210.	171.	120.	62.	32.	19.	6.	0.	0.	0.	1345.				167.				244.				113.				148.																							
HORIZ.	0.	0.	0.	17.	82.	145.	195.	226.	237.	226.	195.	145.	82.	17.	0.	0.	0.	1569.				183.				272.				120.				161.																							
MONTH	11	HO	1844.	TOD	63.	TOT	58.	KT	.650	KD	.162																																														
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SATGS SATGD				SAG/ALL DAY SATGS SATGD																															
SOUTH	0.	0.	0.	1.	97.	160.	202.	227.	235.	227.	202.	160.	97.	1.	0.	0.	0.	1612.				184.				283.				110.				152.																							
SOUTHWEST	0.	0.	0.	1.	13.	25.	76.	131.	179.	214.	230.	220.	163.	2.	0.	0.	0.	1252.				157.				233.				98.				131.																							
WEST	0.	0.	0.	1.	13.	25.	34.	40.	42.	99.	144.	165.	141.	2.	0.	0.	0.	705.				115.				159.				81.				99.																							
NORTHWEST	0.	0.	0.	1.	13.	25.	34.	40.	42.	40.	34.	28.	43.	1.	0.	0.	0.	302.				85.				104.				68.				76.																							
NORTH	0.	0.	0.	1.	13.	25.	34.	40.	42.	40.	34.	25.	13.	1.	0.	0.	0.	268.				83.				99.				67.				74.																							
NORTHEAST	0.	0.	0.	1.	43.	28.	34.	40.	42.	40.	34.	25.	13.	1.	0.	0.	0.	302.				85.				104.				68.				76.																							
EAST	0.	0.	0.	2.	141.	165.	144.	99.	42.	40.	34.	25.	13.	1.	0.	0.	0.	705.				115.				159.				81.				99.																							
SOUTHEAST	0.	0.	0.	2.	163.	220.	230.	214.	179.	131.	76.	25.	13.	1.	0.	0.	0.	1252.				157.				233.				98.				131.																							
HORIZ.	0.	0.	0.	2.	50.	108.	155.	185.	196.	185.	155.	108.	50.	2.	0.	0.	0.	1197.				152.				226.				97.				128.																							
MONTH	12	HO	1652.	TOD	56.	TOT	52.	KT	.679	KD	.154																																														
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION				SAG/DAYTIME SATGS SATGD				SAG/ALL DAY SATGS SATGD																															
SOUTH	0.	0.	0.	0.	99.	175.	221.	249.	258.	249.	221.	175.	99.	0.	0.	0.	0.	1744.				192.				303.				108.				154.																							
SOUTHWEST	0.	0.	0.	0.	10.	27.	84.	143.	194.	231.	247.	233.	159.	0.	0.	0.	0.	1326.				159.				244.				95.				129.																							
WEST	0.	0.	0.	0.	10.	22.	31.	37.	39.	99.	146.	167.	132.	0.	0.	0.	0.	683.				109.				153.				74.				92.																							
NORTHWEST	0.	0.	0.	0.	10.	22.	31.	37.	39.	37.	31.	22.	33.	0.	0.	0.	0.	262.				76.				93.				60.				67.																							
NORTH	0.	0.	0.	0.	10.	22.	31.	37.	39.	37.	31.	22.	10.	0.	0.	0.	0.	239.				75.				90.				60.				66.																							
NORTHEAST	0.	0.	0.	0.	33.	22.	31.	37.	39.	37.	31.	22.	10.	0.	0.	0.	0.	262.				76.				93.				60.				67.																							
EAST	0.	0.	0.	0.	132.	167.	146.	99.	39.	37.	31.	22.	10.	0.	0.	0.	0.	683.				109.				153.				74.				92.																							
SOUTHEAST	0.	0.	0.	0.	159.	233.	247.	231.	194.	143.	84.	27.	10.	0.	0.	0.	0.	1326.				159.				244.				95.				129.																							
HORIZ.	0.	0.	0.	0.	39.	99.	148.	179.	190.	179.	148.	99.	39.	0.	0.	0.	0.	1122.				143.				215.				88.				117.																							



LOCATION TUCSON, ARIZONA LATITUDE 32 DEGREES 7 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	175.	163.	82.	132.	101.	127.	134.	147.	179.	184.	184.	192.	150.
SOUTHWEST	148.	147.	82.	148.	101.	151.	152.	159.	177.	167.	157.	159.	146.
WEST	107.	120.	82.	149.	101.	164.	161.	160.	161.	138.	115.	109.	131.
NORTHWEST	77.	90.	82.	125.	101.	153.	149.	140.	129.	106.	85.	76.	109.
NORTH	74.	81.	82.	100.	101.	130.	129.	120.	112.	97.	83.	75.	99.
NORTHEAST	77.	90.	82.	125.	101.	153.	149.	140.	129.	106.	85.	76.	109.
EAST	107.	120.	82.	149.	101.	164.	161.	160.	161.	138.	115.	109.	131.
SOUTHEAST	148.	147.	82.	148.	101.	151.	152.	159.	177.	167.	157.	159.	146.
HORIZ.	144.	163.	95.	217.	117.	238.	225.	222.	223.	183.	152.	143.	177.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	273.	249.	98.	183.	119.	158.	167.	192.	252.	274.	283.	303.	213.
SOUTHWEST	225.	221.	98.	212.	119.	199.	199.	215.	248.	244.	233.	244.	205.
WEST	150.	171.	98.	213.	119.	224.	215.	215.	220.	190.	159.	153.	177.
NORTHWEST	95.	116.	98.	170.	119.	203.	193.	181.	164.	132.	104.	93.	139.
NORTH	91.	101.	98.	124.	119.	163.	158.	145.	133.	117.	99.	90.	120.
NORTHEAST	95.	116.	98.	170.	119.	203.	193.	181.	164.	132.	104.	93.	139.
EAST	150.	171.	98.	213.	119.	224.	215.	215.	220.	190.	159.	153.	177.
SOUTHEAST	225.	221.	98.	212.	119.	199.	199.	215.	248.	244.	233.	244.	205.
HORIZ.	218.	250.	122.	336.	146.	354.	328.	325.	330.	272.	226.	215.	260.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	101.	102.	68.	99.	86.	106.	111.	116.	128.	121.	110.	108.	105.
SOUTHWEST	90.	95.	68.	107.	86.	119.	122.	123.	127.	113.	98.	95.	104.
WEST	72.	82.	68.	108.	86.	128.	127.	123.	119.	99.	81.	74.	97.
NORTHWEST	59.	68.	68.	95.	86.	121.	120.	113.	103.	84.	68.	60.	87.
NORTH	58.	64.	68.	81.	86.	107.	108.	101.	94.	80.	67.	60.	81.
NORTHEAST	59.	68.	68.	95.	86.	121.	120.	113.	103.	84.	68.	60.	87.
EAST	72.	82.	68.	108.	86.	128.	127.	123.	119.	99.	81.	74.	97.
SOUTHEAST	90.	95.	68.	107.	86.	119.	122.	123.	127.	113.	98.	95.	104.
HORIZ.	88.	102.	74.	145.	95.	171.	164.	157.	150.	120.	97.	88.	121.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	144.	142.	76.	127.	97.	124.	130.	141.	165.	162.	152.	154.	134.
SOUTHWEST	123.	129.	76.	142.	97.	148.	149.	153.	163.	148.	131.	129.	132.
WEST	91.	106.	76.	143.	97.	162.	158.	153.	148.	123.	99.	92.	121.
NORTHWEST	67.	81.	76.	120.	97.	150.	146.	135.	120.	96.	76.	67.	103.
NORTH	65.	73.	76.	95.	97.	127.	126.	115.	105.	89.	74.	66.	92.
NORTHEAST	67.	81.	76.	120.	97.	150.	146.	135.	120.	96.	76.	67.	103.
EAST	91.	106.	76.	143.	97.	162.	158.	153.	148.	123.	99.	92.	121.
SOUTHEAST	123.	129.	76.	142.	97.	148.	149.	153.	163.	148.	131.	129.	132.
HORIZ.	120.	142.	88.	210.	112.	239.	223.	213.	203.	161.	128.	117.	163.

LOCATION UPTON, NEW YORK LATITUDE 40 DEGREES 51 MINUTES

MONTH	1	HO	1382.	TOD	35.	TOT	33.	KT	.444	KD	.185											
ORIENTATION	4	5	6	7	8	9	HOURLY SOLAR RADIATION										DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
							10	11	12	13	14	15	16	17	18	19		20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	42.	91.	122.	140.	146.	140.	122.	91.	42.	0.	0.	0.	0.	937.	110.	172.	63.	87.
SOUTHWEST	0.	0.	0.	0.	8.	19.	53.	85.	113.	130.	134.	119.	67.	0.	0.	0.	0.	729.	94.	141.	56.	75.
WEST	0.	0.	0.	0.	8.	17.	25.	30.	31.	61.	83.	88.	57.	0.	0.	0.	0.	399.	67.	93.	46.	56.
NORTHWEST	0.	0.	0.	0.	8.	17.	25.	30.	31.	30.	25.	17.	18.	0.	0.	0.	0.	200.	51.	64.	39.	45.
NORTH	0.	0.	0.	0.	8.	17.	25.	30.	31.	30.	25.	17.	8.	0.	0.	0.	0.	189.	50.	63.	39.	44.
NORTHEAST	0.	0.	0.	0.	18.	17.	25.	30.	31.	30.	25.	17.	8.	0.	0.	0.	0.	200.	51.	64.	39.	45.
EAST	0.	0.	0.	0.	57.	88.	83.	61.	31.	30.	25.	17.	8.	0.	0.	0.	0.	399.	67.	93.	46.	56.
SOUTHEAST	0.	0.	0.	0.	67.	119.	134.	130.	113.	85.	53.	19.	8.	0.	0.	0.	0.	729.	94.	141.	56.	75.
HORIZ.	0.	0.	0.	0.	19.	54.	82.	100.	106.	100.	82.	54.	19.	0.	0.	0.	0.	614.	84.	125.	53.	69.

MONTH	2	HO	1953.	TOD	35.	TOT	33.	KT	.483	KD	.187	DAILY TOTAL RADIATION										SAG/DAYTIME SATGS		SAG/ALL DAY SATGS	
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20								
SOUTH	0.	0.	0.	12.	64.	103.	132.	150.	156.	150.	132.	103.	64.	12.	0.	0.	0.	1075.	112.	174.	67.	95.			
SOUTHWEST	0.	0.	0.	4.	15.	26.	54.	91.	122.	143.	152.	144.	113.	27.	0.	0.	0.	892.	99.	151.	61.	85.			
WEST	0.	0.	0.	4.	15.	26.	34.	39.	41.	76.	103.	116.	105.	29.	0.	0.	0.	588.	77.	111.	52.	67.			
NORTHWEST	0.	0.	0.	4.	15.	26.	34.	39.	41.	39.	34.	35.	45.	16.	0.	0.	0.	328.	58.	77.	43.	52.			
NORTH	0.	0.	0.	4.	15.	26.	34.	39.	41.	39.	34.	26.	15.	4.	0.	0.	0.	278.	55.	71.	42.	49.			
NORTHEAST	0.	0.	0.	16.	45.	35.	34.	39.	41.	39.	34.	26.	15.	4.	0.	0.	0.	328.	58.	77.	43.	52.			
EAST	0.	0.	0.	29.	105.	116.	103.	76.	41.	39.	34.	26.	15.	4.	0.	0.	0.	588.	77.	111.	52.	67.			
SOUTHEAST	0.	0.	0.	27.	113.	144.	152.	143.	122.	91.	54.	26.	15.	4.	0.	0.	0.	892.	99.	151.	61.	85.			
HORIZ.	0.	0.	0.	8.	48.	87.	118.	138.	145.	138.	118.	87.	48.	8.	0.	0.	0.	943.	102.	157.	63.	88.			

MONTH	3	HO	2589.	TOD	43.	TOT	41.	KT	.522	KD	.185	DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	SATGS	SATGD	SATGS	SATGD	
SOUTH	0.	0.	0.	27.	67.	104.	132.	150.	156.	150.	132.	104.	67.	27.	0.	0.	0.	1117.	115.	173.	77.	106.
SOUTHWEST	0.	0.	0.	12.	24.	35.	50.	91.	125.	150.	162.	159.	136.	85.	0.	0.	0.	1029.	109.	163.	74.	101.
WEST	0.	0.	0.	12.	24.	35.	43.	48.	50.	90.	122.	141.	140.	101.	0.	0.	0.	806.	95.	137.	67.	88.
NORTHWEST	0.	0.	0.	12.	24.	35.	43.	48.	50.	48.	43.	61.	75.	64.	0.	0.	0.	503.	75.	102.	57.	70.
NORTH	0.	0.	0.	12.	24.	35.	43.	48.	50.	48.	43.	35.	24.	12.	0.	0.	0.	373.	67.	86.	53.	62.
NORTHEAST	0.	0.	0.	64.	75.	61.	43.	48.	50.	48.	43.	35.	24.	12.	0.	0.	0.	503.	75.	102.	57.	70.
EAST	0.	0.	0.	101.	140.	141.	122.	90.	50.	48.	43.	35.	24.	12.	0.	0.	0.	806.	95.	137.	67.	88.
SOUTHEAST	0.	0.	0.	85.	136.	159.	162.	150.	125.	91.	50.	35.	24.	12.	0.	0.	0.	1029.	109.	163.	74.	101.
HORIZ.	0.	0.	0.	35.	82.	125.	159.	180.	187.	180.	159.	125.	82.	35.	0.	0.	0.	1350.	129.	200.	84.	119.

LOCATION		UPTON, NEW YORK		LATITUDE 40 DEGREES 51 MINUTES																		
MONTH	4	H0	3218.	TOD	52.	TOT	50.	KT	.514	KD	.186											
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS
SOUTH	0.	0.	7.	21.	54.	85.	111.	127.	132.	127.	111.	85.	54.	21.	7.	0.	0.	940.	106.	150.	80.	105.
SOUTHWEST	0.	0.	7.	20.	31.	42.	50.	78.	110.	134.	146.	144.	128.	95.	37.	0.	0.	1020.	111.	159.	83.	109.
WEST	0.	0.	7.	20.	31.	42.	50.	55.	56.	94.	124.	143.	146.	125.	57.	0.	0.	950.	107.	151.	80.	105.
NORTHWEST	0.	0.	7.	20.	31.	42.	50.	55.	56.	55.	60.	83.	97.	93.	48.	0.	0.	696.	92.	125.	72.	90.
NORTH	0.	0.	15.	20.	31.	42.	50.	55.	56.	55.	50.	42.	31.	20.	15.	0.	0.	481.	80.	102.	65.	78.
NORTHEAST	0.	0.	48.	93.	97.	83.	60.	55.	56.	55.	50.	42.	31.	20.	7.	0.	0.	696.	92.	125.	72.	90.
EAST	0.	0.	57.	125.	146.	143.	124.	94.	56.	55.	50.	42.	31.	20.	7.	0.	0.	950.	107.	151.	80.	105.
SOUTHEAST	0.	0.	37.	95.	128.	144.	146.	134.	110.	78.	50.	42.	31.	20.	7.	0.	0.	1020.	111.	159.	83.	109.
HORIZ.	0.	0.	18.	63.	109.	150.	182.	202.	208.	202.	182.	150.	109.	63.	18.	0.	0.	1655.	147.	225.	103.	146.
MONTH 5		H0	3618.	TOD	63.	TOT	61.	KT	.532	KD	.184											
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS
SOUTH	0.	2.	13.	25.	43.	73.	97.	112.	118.	112.	97.	73.	43.	25.	13.	2.	0.	845.	111.	148.	90.	112.
SOUTHWEST	0.	2.	13.	25.	36.	46.	53.	68.	101.	125.	137.	138.	124.	96.	54.	3.	0.	1020.	121.	165.	96.	122.
WEST	0.	2.	13.	25.	36.	46.	53.	58.	60.	98.	129.	149.	154.	139.	93.	4.	0.	1057.	123.	169.	97.	125.
NORTHWEST	0.	2.	13.	25.	36.	46.	53.	58.	60.	58.	76.	100.	115.	114.	85.	4.	0.	844.	111.	148.	90.	112.
NORTH	0.	3.	35.	38.	36.	46.	53.	58.	60.	58.	53.	46.	36.	38.	35.	3.	0.	597.	97.	123.	81.	97.
NORTHEAST	0.	4.	85.	114.	115.	100.	76.	58.	60.	58.	53.	46.	36.	25.	13.	2.	0.	844.	111.	148.	90.	112.
EAST	0.	4.	93.	139.	154.	149.	129.	98.	60.	58.	53.	46.	36.	25.	13.	2.	0.	1057.	123.	169.	97.	125.
SOUTHEAST	0.	3.	54.	96.	124.	138.	137.	125.	101.	68.	53.	46.	36.	25.	13.	2.	0.	1020.	121.	165.	96.	122.
HORIZ.	0.	3.	37.	84.	130.	170.	202.	221.	228.	221.	202.	170.	130.	84.	37.	3.	0.	1925.	172.	256.	127.	177.
MONTH 6		H0	3763.	TOD	72.	TOT	70.	KT	.574	KD	.178											
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS	SATGD	SAG/ALL DAY SATGS
SOUTH	0.	4.	15.	26.	38.	69.	95.	112.	117.	112.	95.	69.	38.	26.	15.	4.	0.	834.	118.	153.	98.	120.
SOUTHWEST	0.	4.	15.	26.	38.	47.	55.	65.	101.	128.	142.	144.	131.	103.	61.	9.	0.	1068.	131.	176.	106.	134.
WEST	0.	4.	15.	26.	38.	47.	55.	60.	61.	104.	139.	162.	169.	155.	111.	20.	0.	1166.	136.	185.	110.	140.
NORTHWEST	0.	4.	15.	26.	38.	47.	55.	60.	61.	60.	86.	113.	131.	133.	105.	21.	0.	955.	125.	165.	102.	127.
NORTH	0.	12.	46.	48.	38.	47.	55.	60.	61.	60.	55.	47.	38.	48.	46.	12.	0.	674.	109.	138.	93.	110.
NORTHEAST	0.	21.	105.	133.	131.	113.	86.	60.	61.	60.	55.	47.	38.	26.	15.	4.	0.	955.	125.	165.	102.	127.
EAST	0.	20.	111.	155.	169.	162.	139.	104.	61.	60.	55.	47.	38.	26.	15.	4.	0.	1166.	136.	185.	110.	140.
SOUTHEAST	0.	9.	61.	103.	131.	144.	142.	128.	101.	65.	55.	47.	38.	26.	15.	4.	0.	1068.	131.	176.	106.	134.
HORIZ.	0.	8.	47.	97.	147.	189.	223.	244.	251.	244.	223.	189.	147.	97.	47.	8.	0.	2160.	191.	282.	144.	200.

LOCATION	UPTON, NEW YORK		LATITUDE 40 DEGREES 51 MINUTES																			
MONTH	7	HO 3616.	TOD	77.	TOT	75.	KT	.557	KD	.180												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAT6S SAT6D SAT6S SAT6D			
SOUTH	0.	2.	13.	25.	43.	74.	100.	117.	122.	117.	100.	74.	43.	25.	13.	2.	0.	869.	126.	164.	104.	127.
SOUTHWEST	0.	2.	13.	25.	36.	46.	54.	69.	104.	130.	144.	145.	130.	101.	55.	3.	0.	1056.	137.	182.	111.	138.
WEST	0.	2.	13.	25.	36.	46.	54.	58.	60.	101.	135.	157.	163.	146.	97.	4.	0.	1097.	139.	187.	112.	141.
NORTHWEST	0.	2.	13.	25.	36.	46.	54.	58.	60.	58.	78.	104.	121.	121.	89.	4.	0.	870.	126.	164.	104.	127.
NORTH	0.	3.	36.	39.	36.	46.	54.	58.	60.	58.	54.	46.	36.	39.	36.	3.	0.	605.	111.	137.	95.	111.
NORTHEAST	0.	4.	89.	121.	121.	104.	78.	58.	60.	58.	54.	46.	36.	25.	13.	2.	0.	870.	126.	164.	104.	127.
EAST	0.	4.	97.	146.	163.	157.	135.	101.	60.	58.	54.	46.	36.	25.	13.	2.	0.	1097.	139.	187.	112.	141.
SOUTHEAST	0.	3.	55.	101.	130.	145.	144.	130.	104.	69.	54.	46.	36.	25.	13.	2.	0.	1056.	137.	182.	111.	138.
HORIZ.	0.	4.	38.	87.	136.	179.	212.	232.	239.	232.	212.	179.	136.	87.	38.	4.	0.	2014.	191.	278.	143.	196.
MONTH	8	HO 3195.	TOD	75.	TOT	73.	KT	.542	KD	.182												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAT6S SAT6D SAT6S SAT6D			
SOUTH	0.	0.	7.	20.	55.	89.	116.	133.	139.	133.	116.	89.	55.	20.	7.	0.	0.	980.	135.	181.	107.	132.
SOUTHWEST	0.	0.	7.	19.	31.	42.	50.	80.	115.	141.	154.	153.	135.	98.	36.	0.	0.	1062.	140.	190.	110.	137.
WEST	0.	0.	7.	19.	31.	42.	50.	55.	56.	56.	98.	131.	152.	155.	130.	56.	0.	983.	135.	181.	107.	133.
NORTHWEST	0.	0.	7.	19.	31.	42.	50.	55.	56.	55.	61.	87.	102.	97.	47.	0.	0.	708.	119.	152.	97.	116.
NORTH	0.	0.	15.	19.	31.	42.	50.	55.	56.	55.	50.	42.	31.	19.	15.	0.	0.	480.	105.	127.	90.	102.
NORTHEAST	0.	0.	47.	97.	102.	87.	61.	55.	56.	55.	50.	42.	31.	19.	7.	0.	0.	708.	119.	152.	97.	116.
EAST	0.	0.	56.	130.	155.	152.	131.	98.	56.	55.	50.	42.	31.	19.	7.	0.	0.	983.	135.	181.	107.	133.
SOUTHEAST	0.	0.	36.	98.	135.	153.	154.	141.	115.	80.	50.	42.	31.	19.	7.	0.	0.	1062.	140.	190.	110.	137.
HORIZ.	0.	0.	18.	64.	114.	157.	191.	213.	220.	213.	191.	157.	114.	64.	18.	0.	0.	1733.	181.	263.	132.	178.
MONTH	9	HO 2577.	TOD	69.	TOT	67.	KT	.542	KD	.182												
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAT6S SAT6D SAT6S SAT6D			
SOUTH	0.	0.	0.	26.	68.	107.	137.	156.	163.	156.	137.	107.	68.	26.	0.	0.	0.	1153.	148.	208.	107.	137.
SOUTHWEST	0.	0.	0.	12.	24.	35.	50.	93.	130.	156.	169.	165.	140.	85.	0.	0.	0.	1059.	142.	197.	104.	131.
WEST	0.	0.	0.	12.	24.	35.	43.	48.	50.	93.	127.	147.	144.	100.	0.	0.	0.	824.	126.	168.	95.	117.
NORTHWEST	0.	0.	0.	12.	24.	35.	43.	48.	50.	48.	43.	63.	78.	64.	0.	0.	0.	508.	104.	130.	85.	98.
NORTH	0.	0.	0.	12.	24.	35.	43.	48.	50.	48.	43.	35.	24.	12.	0.	0.	0.	373.	95.	114.	80.	90.
NORTHEAST	0.	0.	0.	64.	78.	63.	43.	48.	50.	48.	43.	35.	24.	12.	0.	0.	0.	508.	104.	130.	85.	98.
EAST	0.	0.	0.	100.	144.	147.	127.	93.	50.	48.	43.	35.	24.	12.	0.	0.	0.	824.	126.	168.	95.	117.
SOUTHEAST	0.	0.	0.	85.	140.	165.	169.	156.	130.	93.	50.	35.	24.	12.	0.	0.	0.	1059.	142.	197.	104.	131.
HORIZ.	0.	0.	1.	35.	84.	129.	165.	187.	194.	187.	165.	129.	84.	35.	1.	0.	0.	1396.	164.	237.	115.	152.



LOCATION		UPTON, NEW YORK		LATITUDE		40 DEGREES		51 MINUTES													
MONTH	10	H0	1919.	TOD	59.	TOT	57.	KT	.538	KD	.183										
ORIENTATION		HOURLY SOLAR RADIATION																			
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	0.	11.	71.	118.	152.	173.	180.	173.	152.	118.	71.	11.	0.	0.	1228.	147.	219.	96.	129.
SOUTHWEST	0.	0.	0.	4.	15.	26.	59.	102.	139.	165.	176.	166.	127.	24.	0.	0.	1005.	131.	190.	89.	116.
WEST	0.	0.	0.	4.	15.	26.	34.	40.	41.	84.	117.	133.	118.	26.	0.	0.	637.	105.	142.	77.	94.
NORTHWEST	0.	0.	0.	4.	15.	26.	34.	40.	41.	40.	34.	37.	48.	14.	0.	0.	333.	83.	103.	68.	76.
NORTH	0.	0.	0.	4.	15.	26.	34.	40.	41.	40.	34.	26.	15.	4.	0.	0.	279.	79.	96.	66.	73.
NORTHEAST	0.	0.	0.	14.	48.	37.	34.	40.	41.	40.	34.	26.	15.	4.	0.	0.	333.	83.	103.	68.	76.
EAST	0.	0.	0.	26.	118.	133.	117.	84.	41.	40.	34.	26.	15.	4.	0.	0.	637.	105.	142.	77.	94.
SOUTHEAST	0.	0.	0.	24.	127.	166.	176.	165.	139.	102.	59.	26.	15.	4.	0.	0.	1005.	131.	190.	89.	116.
HORIZ.	0.	0.	0.	7.	50.	95.	130.	153.	160.	153.	130.	95.	50.	7.	0.	0.	1032.	133.	194.	90.	117.
MONTH	11	H0	1371.	TOD	48.	TOT	46.	KT	.448	KD	.185										
ORIENTATION		HOURLY SOLAR RADIATION																			
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	0.	0.	41.	91.	123.	142.	148.	142.	123.	91.	41.	0.	0.	0.	943.	124.	186.	77.	101.
SOUTHWEST	0.	0.	0.	7.	19.	53.	86.	114.	132.	136.	120.	65.	0.	0.	0.	0.	732.	107.	155.	70.	89.
WEST	0.	0.	0.	7.	17.	25.	30.	31.	62.	83.	88.	55.	0.	0.	0.	0.	398.	80.	107.	59.	69.
NORTHWEST	0.	0.	0.	7.	17.	25.	30.	31.	30.	25.	17.	18.	0.	0.	0.	0.	199.	64.	77.	53.	58.
NORTH	0.	0.	0.	7.	17.	25.	30.	31.	30.	25.	17.	7.	0.	0.	0.	0.	189.	63.	76.	52.	57.
NORTHEAST	0.	0.	0.	18.	17.	25.	30.	31.	30.	25.	17.	7.	0.	0.	0.	0.	199.	64.	77.	53.	58.
EAST	0.	0.	0.	55.	88.	83.	62.	31.	30.	25.	17.	7.	0.	0.	0.	0.	398.	80.	107.	59.	69.
SOUTHEAST	0.	0.	0.	65.	120.	136.	132.	114.	86.	53.	19.	7.	0.	0.	0.	0.	732.	107.	155.	70.	89.
HORIZ.	0.	0.	0.	19.	53.	82.	100.	106.	100.	82.	53.	19.	0.	0.	0.	0.	615.	98.	138.	66.	82.
MONTH	12	H0	1166.	TOD	38.	TOT	36.	KT	.467	KD	.186										
ORIENTATION		HOURLY SOLAR RADIATION																			
4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SATGS SATGD	SAG/ALL DAY SATGS SATGD		
SOUTH	0.	0.	0.	28.	93.	131.	152.	159.	152.	131.	93.	28.	0.	0.	0.	0.	968.	120.	187.	67.	92.
SOUTHWEST	0.	0.	0.	5.	20.	56.	92.	121.	139.	142.	120.	43.	0.	0.	0.	0.	738.	100.	152.	59.	79.
WEST	0.	0.	0.	5.	14.	22.	27.	28.	61.	83.	85.	36.	0.	0.	0.	0.	360.	68.	93.	47.	57.
NORTHWEST	0.	0.	0.	5.	14.	22.	27.	28.	27.	22.	14.	10.	0.	0.	0.	0.	169.	52.	64.	41.	46.
NORTH	0.	0.	0.	5.	14.	22.	27.	28.	27.	22.	14.	5.	0.	0.	0.	0.	164.	52.	63.	41.	45.
NORTHEAST	0.	0.	0.	10.	14.	22.	27.	28.	27.	22.	14.	5.	0.	0.	0.	0.	169.	52.	64.	41.	46.
EAST	0.	0.	0.	36.	85.	83.	61.	28.	27.	22.	14.	5.	0.	0.	0.	0.	360.	68.	93.	47.	57.
SOUTHEAST	0.	0.	0.	43.	120.	142.	139.	121.	92.	56.	20.	5.	0.	0.	0.	0.	738.	100.	152.	59.	79.
HORIZ.	0.	0.	0.	11.	45.	74.	93.	100.	93.	74.	45.	11.	0.	0.	0.	0.	545.	84.	122.	53.	67.

LOCATION UPTON, NEW YORK LATITUDE 40 DEGREES 51 MINUTES

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	110.	112.	115.	106.	111.	118.	126.	135.	148.	147.	124.	120.	123.
SOUTHWEST	94.	99.	109.	111.	121.	131.	137.	140.	142.	131.	107.	100.	114.
WEST	67.	77.	95.	107.	123.	136.	139.	135.	126.	105.	80.	68.	105.
NORTHWEST	51.	58.	75.	92.	111.	125.	126.	119.	104.	83.	64.	52.	88.
NORTH	50.	55.	67.	80.	97.	109.	111.	105.	95.	79.	63.	52.	80.
NORTHEAST	51.	58.	75.	92.	111.	125.	126.	119.	104.	83.	64.	52.	88.
EAST	67.	77.	95.	107.	123.	136.	139.	135.	126.	105.	80.	68.	105.
SOUTHEAST	94.	99.	109.	111.	121.	131.	137.	140.	142.	131.	107.	100.	118.
HORIZ.	84.	102.	129.	147.	172.	191.	191.	181.	164.	133.	98.	84.	140.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	172.	174.	173.	150.	148.	153.	164.	181.	208.	219.	186.	187.	176.
SOUTHWEST	141.	151.	163.	159.	165.	176.	182.	190.	197.	190.	155.	152.	168.
WEST	93.	111.	137.	151.	169.	185.	187.	181.	168.	142.	107.	93.	144.
NORTHWEST	64.	77.	102.	125.	148.	165.	164.	152.	130.	103.	77.	64.	114.
NORTH	63.	71.	86.	102.	123.	138.	137.	127.	114.	96.	76.	63.	100.
NORTHEAST	64.	77.	102.	125.	148.	165.	164.	152.	130.	103.	77.	64.	114.
EAST	93.	111.	137.	151.	169.	185.	187.	181.	168.	142.	107.	93.	144.
SOUTHEAST	141.	151.	163.	159.	165.	176.	182.	190.	197.	190.	155.	152.	168.
HORIZ.	125.	151.	200.	225.	256.	282.	278.	263.	237.	194.	138.	122.	206.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	63.	67.	77.	80.	90.	98.	104.	107.	107.	96.	77.	67.	86.
SOUTHWEST	56.	61.	74.	83.	96.	106.	111.	110.	104.	89.	70.	59.	85.
WEST	46.	52.	67.	80.	97.	110.	112.	107.	95.	77.	59.	47.	79.
NORTHWEST	39.	43.	57.	72.	90.	102.	104.	97.	85.	68.	53.	41.	71.
NORTH	39.	42.	53.	65.	81.	93.	95.	90.	80.	66.	52.	41.	66.
NORTHEAST	39.	43.	57.	72.	90.	102.	104.	97.	85.	68.	53.	41.	71.
EAST	46.	52.	67.	80.	97.	110.	112.	107.	95.	77.	59.	47.	79.
SOUTHEAST	56.	61.	74.	83.	96.	106.	111.	110.	104.	89.	70.	59.	85.
HORIZ.	53.	63.	84.	103.	127.	144.	143.	132.	115.	90.	66.	53.	98.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	87.	95.	106.	105.	112.	120.	127.	132.	137.	129.	101.	92.	112.
SOUTHWEST	75.	85.	101.	109.	125.	134.	138.	137.	131.	116.	89.	79.	110.
WEST	56.	67.	88.	105.	122.	140.	141.	133.	117.	94.	69.	57.	99.
NORTHWEST	45.	52.	70.	90.	112.	127.	127.	116.	98.	76.	58.	46.	85.
NORTH	44.	49.	62.	78.	97.	110.	111.	102.	90.	73.	57.	45.	77.
NORTHEAST	45.	52.	70.	90.	112.	127.	127.	116.	98.	76.	58.	46.	85.
EAST	56.	67.	88.	105.	122.	140.	141.	133.	117.	94.	69.	57.	99.
SOUTHEAST	75.	85.	101.	109.	122.	134.	138.	137.	131.	116.	89.	79.	110.
HORIZ.	69.	88.	119.	146.	177.	200.	196.	178.	152.	117.	82.	67.	133.

LOCATION		WASHINGTON, D.C.		LATITUDE		38 DEGREES		51 MINUTES																																			
MONTH 1		HO 1493.		TOD 38.		TOT 36.		KT		.445		KD		.185																													
ORIENTATION		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS			
SOUTH		0.		0.		0.		0.		47.		93.		122.		140.		146.		140.		122.		93.		47.		0.		0.		0.		951.		114.		175.		67.		92.	
SOUTHWEST		0.		0.		0.		0.		9.		20.		53.		86.		113.		131.		136.		122.		75.		0.		0.		0.		745.		97.		145.		60.		80.	
WEST		0.		0.		0.		0.		9.		19.		27.		31.		33.		63.		85.		91.		65.		0.		0.		0.		422.		72.		99.		50.		61.	
NORTHWEST		0.		0.		0.		0.		9.		19.		27.		31.		33.		31.		27.		19.		21.		0.		0.		0.		217.		56.		69.		43.		49.	
NORTH		0.		0.		0.		0.		9.		19.		27.		31.		33.		31.		27.		19.		9.		0.		0.		0.		204.		55.		68.		43.		48.	
NORTHEAST		0.		0.		0.		0.		21.		19.		27.		31.		33.		31.		27.		19.		9.		0.		0.		0.		217.		56.		69.		43.		49.	
EAST		0.		0.		0.		0.		65.		91.		85.		63.		33.		31.		27.		19.		9.		0.		0.		0.		422.		72.		99.		50.		61.	
SOUTHEAST		0.		0.		0.		0.		75.		122.		136.		131.		113.		86.		53.		20.		9.		0.		0.		0.		745.		97.		145.		60.		80.	
HORIZ.		0.		0.		0.		0.		23.		59.		88.		106.		112.		106.		88.		59.		23.		0.		0.		0.		664.		91.		134.		58.		75.	
MONTH 2		HO 2052.		TOD 40.		TOT 37.		KT		.470		KD		.186																													
ORIENTATION		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS			
SOUTH		0.		0.		0.		14.		62.		99.		126.		143.		149.		143.		126.		99.		62.		14.		0.		0.		1038.		113.		173.		70.		98.	
SOUTHWEST		0.		0.		0.		5.		16.		27.		53.		88.		117.		138.		146.		139.		111.		33.		0.		0.		872.		101.		152.		65.		88.	
WEST		0.		0.		0.		5.		16.		27.		35.		40.		42.		76.		101.		114.		104.		35.		0.		0.		594.		82.		116.		56.		72.	
NORTHWEST		0.		0.		0.		5.		16.		27.		35.		40.		42.		40.		35.		37.		45.		19.		0.		0.		343.		64.		84.		48.		57.	
NORTH		0.		0.		0.		5.		16.		27.		35.		40.		42.		40.		35.		27.		16.		5.		0.		0.		289.		60.		77.		46.		54.	
NORTHEAST		0.		0.		0.		19.		45.		37.		35.		40.		42.		40.		35.		27.		16.		5.		0.		0.		343.		64.		84.		57.		62.	
EAST		0.		0.		0.		35.		104.		114.		101.		76.		42.		40.		35.		27.		16.		5.		0.		0.		594.		82.		116.		56.		72.	
SOUTHEAST		0.		0.		0.		33.		111.		139.		146.		138.		117.		88.		53.		27.		16.		5.		0.		0.		872.		101.		152.		65.		88.	
HORIZ.		0.		0.		0.		10.		50.		89.		120.		140.		146.		140.		120.		89.		50.		10.		0.		0.		965.		108.		164.		68.		93.	
MONTH 3		HO 2665.		TOD 48.		TOT 45.		KT		.496		KD		.188																													
ORIENTATION		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		DAILY TOTAL RADIATION		SAG/DAYTIME SATGS		SAG/ALL DAY SATGS			
SOUTH		0.		0.		0.		25.		62.		96.		122.		138.		144.		138.		122.		96.		62.		25.		0.		0.		1032.		114.		168.		78.		105.	
SOUTHWEST		0.		0.		0.		12.		25.		35.		48.		85.		117.		139.		150.		147.		126.		80.		0.		0.		965.		110.		160.		76.		102.	
WEST		0.		0.		0.		12.		25.		35.		44.		49.		51.		88.		116.		133.		131.		94.		0.		0.		778.		98.		138.		70.		91.	
NORTHWEST		0.		0.		0.		12.		25.		35.		44.		49.		51.		49.		44.		62.		73.		61.		0.		0.		504.		90.		107.		61.		75.	
NORTH		0.		0.		0.		12.		25.		35.		44.		49.		51.		49.		44.		35.		25.		12.		0.		0.		381.		72.		92.		58.		67.	
NORTHEAST		0.		0.		0.		61.		73.		62.		44.		49.		51.		49.		44.		35.		25.		12.		0.		0.		504.		90.		107.		61.		75.	
EAST		0.		0.		0.		94.		131.		133.		116.		88.		51.		49.		44.		35.		25.		12.		0.		0.		778.		98.		138.		70.		91.	
SOUTHEAST		0.		0.		0.		80.		126.		147.		150.		139.		117.		85.		48.		35.		25.		12.		0.		0.		965.		110.		160.		76.		102.	
HORIZ.		0.		0.		0.		35.		81.		123.		155.		175.		182.		175.		155.		123.		81.		35.		0.		0.		1320.		133.		201.		88.		122.	

LOCATION		WASHINGTON, D.C.		LATITUDE 38 DEGREES 51 MINUTES																				
MONTH	4	HO	3258.	TOD	57.	TOT	54.	KT	.504	KD	.187													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAT6S SAT6D		SAG/ALL DAY SAT6S SAT6D		
		HOURLY SOLAR RADIATION																			SAT6S	SAT6D	SAT6S	SAT6D
SOUTH	0.	0.	7.	20.	51.	81.	105.	120.	126.	120.	105.	81.	51.	20.	7.	0.	0.	0.	893.	109.	151.	83.	106.	
SOUTHWEST	0.	0.	7.	20.	32.	42.	50.	74.	106.	128.	140.	139.	123.	91.	34.	0.	0.	0.	985.	115.	161.	86.	112.	
WEST	0.	0.	7.	20.	32.	42.	50.	56.	57.	94.	122.	140.	142.	120.	52.	0.	0.	0.	934.	112.	156.	84.	109.	
NORTHWEST	0.	0.	7.	20.	32.	42.	50.	56.	57.	56.	63.	84.	96.	91.	44.	0.	0.	0.	698.	98.	131.	77.	95.	
NORTH	0.	0.	14.	20.	32.	42.	50.	56.	57.	56.	50.	42.	32.	20.	14.	0.	0.	0.	485.	96.	109.	70.	83.	
NORTHEAST	0.	0.	44.	91.	96.	84.	63.	56.	57.	56.	50.	42.	32.	20.	7.	0.	0.	0.	698.	98.	131.	77.	95.	
EAST	0.	0.	52.	120.	142.	140.	122.	94.	57.	56.	50.	42.	32.	20.	7.	0.	0.	0.	934.	112.	156.	84.	109.	
SOUTHEAST	0.	0.	34.	91.	123.	139.	140.	128.	106.	74.	50.	42.	32.	20.	7.	0.	0.	0.	985.	115.	161.	86.	112.	
HORIZ.	0.	0.	17.	62.	108.	149.	181.	201.	208.	201.	181.	149.	108.	62.	17.	0.	0.	0.	1643.	153.	230.	107.	150.	
MONTH	5	HO	3627.	TOD	68.	TOT	65.	KT	.516	KD	.186													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAT6S SAT6D		SAG/ALL DAY SAT6S SAT6D		
		HOURLY SOLAR RADIATION																			SAT6S	SAT6D	SAT6S	SAT6D
SOUTH	0.	1.	12.	24.	39.	68.	90.	105.	110.	105.	90.	68.	39.	24.	12.	1.	0.	0.	789.	113.	148.	92.	112.	
SOUTHWEST	0.	1.	12.	24.	36.	46.	54.	65.	95.	118.	130.	130.	117.	90.	49.	1.	0.	0.	969.	123.	166.	98.	123.	
WEST	0.	1.	12.	24.	36.	46.	54.	59.	60.	96.	125.	143.	147.	132.	85.	1.	0.	0.	1022.	126.	171.	100.	126.	
NORTHWEST	0.	1.	12.	24.	36.	46.	54.	59.	60.	59.	78.	100.	112.	110.	78.	1.	0.	0.	830.	115.	152.	93.	115.	
NORTH	0.	1.	33.	38.	36.	46.	54.	59.	60.	59.	54.	46.	36.	38.	33.	1.	0.	0.	593.	102.	128.	85.	101.	
NORTHEAST	0.	1.	78.	110.	112.	100.	78.	59.	60.	59.	54.	46.	36.	24.	12.	1.	0.	0.	830.	115.	152.	93.	115.	
EAST	0.	1.	85.	132.	147.	143.	125.	96.	60.	59.	54.	46.	36.	24.	12.	1.	0.	0.	1022.	126.	171.	100.	126.	
SOUTHEAST	0.	1.	49.	90.	117.	130.	130.	118.	95.	65.	54.	46.	36.	24.	12.	1.	0.	0.	969.	123.	166.	98.	123.	
HORIZ.	0.	2.	34.	81.	126.	166.	197.	217.	224.	217.	197.	166.	126.	81.	34.	2.	0.	0.	1871.	175.	257.	129.	178.	
MONTH	6	HO	3758.	TOD	76.	TOT	73.	KT	.553	KD	.181													
ORIENTATION		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	DAILY TOTAL RADIATION	SAG/DAYTIME SAT6S SAT6D		SAG/ALL DAY SAT6S SAT6D		
		HOURLY SOLAR RADIATION																			SAT6S	SAT6D	SAT6S	SAT6D
SOUTH	0.	3.	14.	26.	38.	63.	87.	103.	108.	103.	87.	63.	38.	26.	14.	3.	0.	0.	777.	119.	153.	100.	120.	
SOUTHWEST	0.	3.	14.	26.	38.	47.	55.	61.	95.	120.	134.	135.	122.	95.	55.	6.	0.	0.	1005.	132.	175.	108.	134.	
WEST	0.	3.	14.	26.	38.	47.	55.	60.	62.	101.	134.	155.	160.	146.	102.	11.	0.	0.	1113.	138.	186.	111.	141.	
NORTHWEST	0.	3.	14.	26.	38.	47.	55.	60.	62.	60.	88.	112.	127.	126.	97.	12.	0.	0.	926.	128.	167.	105.	129.	
NORTH	0.	7.	44.	48.	41.	47.	55.	60.	62.	60.	55.	47.	41.	48.	44.	7.	0.	0.	666.	113.	142.	96.	114.	
NORTHEAST	0.	12.	97.	126.	127.	112.	88.	60.	62.	60.	55.	47.	38.	26.	14.	3.	0.	0.	926.	128.	167.	105.	129.	
EAST	0.	11.	102.	146.	160.	155.	134.	101.	62.	60.	55.	47.	38.	26.	14.	3.	0.	0.	1113.	138.	186.	111.	141.	
SOUTHEAST	0.	6.	55.	95.	122.	135.	134.	120.	95.	61.	55.	47.	38.	26.	14.	3.	0.	0.	1005.	132.	175.	108.	134.	
HORIZ.	0.	6.	43.	92.	141.	183.	216.	237.	244.	237.	216.	183.	141.	92.	43.	6.	0.	0.	2078.	192.	281.	144.	199.	



LOCATION	WASHINGTON, D.C.	LATITUDE	38 DEGREES	51 MNUTES													
MONTH	7	H0	3623.	TOD	80.	TOT	77.	KT	.524	KD	.185						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	1.	12.	24.	39.	68.	91.	106.	111.	106.	91.	68.	39.	24.	12.	1.	0.
SOUTHWEST	0.	1.	12.	24.	36.	46.	54.	65.	96.	119.	132.	132.	118.	91.	49.	2.	0.
WEST	0.	1.	12.	24.	36.	46.	54.	59.	60.	97.	127.	146.	149.	133.	85.	2.	0.
NORTHWEST	0.	1.	12.	24.	36.	46.	54.	59.	60.	59.	79.	101.	114.	111.	78.	2.	0.
NORTH	0.	2.	33.	39.	36.	46.	54.	59.	60.	59.	54.	46.	36.	39.	33.	2.	0.
NORTHEAST	0.	2.	78.	111.	114.	101.	79.	59.	60.	59.	54.	46.	36.	24.	12.	1.	0.
EAST	0.	2.	85.	133.	149.	146.	127.	97.	60.	59.	54.	46.	36.	24.	12.	1.	0.
SOUTHEAST	0.	2.	49.	91.	118.	132.	132.	119.	96.	65.	54.	46.	36.	24.	12.	1.	0.
HORIZ.	0.	2.	34.	81.	128.	169.	200.	220.	227.	220.	200.	169.	128.	81.	34.	2.	0.
MONTH	8	H0	3234.	TOD	78.	TOT	75.	KT	.516	KD	.186						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	7.	19.	51.	82.	107.	123.	128.	123.	107.	82.	51.	19.	7.	0.	0.
SOUTHWEST	0.	0.	7.	19.	31.	42.	50.	75.	107.	131.	143.	142.	125.	91.	31.	0.	0.
WEST	0.	0.	7.	19.	31.	42.	50.	55.	57.	95.	125.	143.	144.	120.	48.	0.	0.
NORTHWEST	0.	0.	7.	19.	31.	42.	50.	55.	57.	55.	63.	86.	98.	91.	41.	0.	0.
NORTH	0.	0.	14.	20.	31.	42.	50.	55.	57.	55.	50.	42.	31.	20.	14.	0.	0.
NORTHEAST	0.	0.	41.	91.	98.	86.	63.	55.	57.	55.	50.	42.	31.	19.	7.	0.	0.
EAST	0.	0.	48.	120.	148.	143.	125.	95.	57.	55.	50.	42.	31.	19.	7.	0.	0.
SOUTHEAST	0.	0.	31.	91.	125.	142.	143.	131.	107.	75.	50.	42.	31.	19.	7.	0.	0.
HORIZ.	0.	0.	16.	61.	109.	152.	185.	205.	212.	205.	185.	152.	109.	61.	16.	0.	0.
MONTH	9	H0	2651.	TOD	72.	TOT	70.	KT	.520	KD	.185						
ORIENTATION	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
SOUTH	0.	0.	0.	25.	64.	100.	128.	145.	151.	145.	128.	100.	64.	25.	0.	0.	0.
SOUTHWEST	0.	0.	0.	12.	24.	35.	48.	88.	122.	147.	159.	155.	132.	81.	0.	0.	0.
WEST	0.	0.	0.	12.	24.	35.	44.	49.	51.	91.	122.	140.	137.	96.	0.	-0.	0.
NORTHWEST	0.	0.	0.	12.	24.	35.	44.	49.	51.	49.	44.	64.	76.	62.	0.	0.	0.
NORTH	0.	0.	0.	12.	24.	35.	44.	49.	51.	49.	44.	35.	24.	12.	0.	0.	0.
NORTHEAST	0.	0.	0.	62.	75.	64.	44.	49.	51.	49.	44.	35.	24.	12.	0.	0.	0.
EAST	0.	0.	0.	96.	137.	140.	122.	91.	51.	49.	44.	35.	24.	12.	0.	0.	0.
SOUTHEAST	0.	0.	0.	81.	132.	155.	159.	147.	122.	88.	48.	35.	24.	12.	0.	0.	0.
SORIZ.	0.	0.	1.	35.	80.	128.	162.	184.	191.	184.	162.</						

## LOCATION WASHINGTON, D.C.

LATITUDE 38 DEGREES 51 MINUTES

[illegible]

ORIENTATION	HOURLY SOLAR RADIATION																DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY		
	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	13.	67.	108.	138.	157.	163.	157.	138.	108.	67.	13.	0.	0.	0.	1128.	141.	207.	94.	124.
SOUTHWEST	0.	0.	0.	4.	16.	27.	36.	95.	128.	151.	161.	152.	118.	29.	0.	0.	0.	938.	128.	182.	88.	113.
WEST	0.	0.	0.	4.	16.	27.	36.	41.	43.	81.	110.	124.	110.	31.	0.	0.	0.	623.	105.	141.	78.	94.
NORTHWEST	0.	0.	0.	4.	16.	27.	36.	41.	43.	41.	36.	38.	47.	17.	0.	0.	0.	346.	86.	106.	69.	78.
NORTH	0.	0.	0.	4.	16.	27.	36.	41.	43.	41.	36.	27.	16.	4.	0.	0.	0.	292.	82.	99.	68.	75.
NORTHEAST	0.	0.	0.	17.	47.	38.	36.	41.	43.	41.	36.	27.	16.	4.	0.	0.	0.	346.	86.	106.	69.	78.
EAST	0.	0.	0.	31.	110.	124.	110.	81.	43.	41.	36.	27.	16.	4.	0.	0.	0.	623.	105.	141.	78.	94.
SOUTHEAST	0.	0.	0.	29.	118.	152.	161.	151.	128.	95.	56.	27.	16.	4.	0.	0.	0.	938.	128.	182.	88.	113.
HORIZ.	0.	0.	0.	9.	52.	94.	128.	149.	157.	149.	128.	94.	52.	9.	0.	0.	0.	1021.	134.	193.	91.	118.

[illegible]

ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	48.	98.	129.	148.	154.	148.	129.	98.	48.	0.	0.	0.	0.	1001.	129.	194.	80.	106.
SOUTHWEST	0.	0.	0.	0.	9.	20.	55.	90.	119.	138.	143.	129.	77.	0.	0.	0.	0.	781.	112.	162.	73.	93.
WEST	0.	0.	0.	0.	0.	9.	19.	27.	32.	34.	66.	89.	95.	66.	0.	0.	0.	436.	85.	113.	62.	73.
NORTHWEST	0.	0.	0.	0.	9.	19.	27.	32.	34.	32.	27.	19.	21.	0.	0.	0.	0.	219.	68.	82.	55.	60.
NORTH	0.	0.	0.	0.	9.	19.	27.	32.	34.	32.	27.	19.	9.	0.	0.	0.	0.	206.	67.	80.	54.	60.
NORTHEAST	0.	0.	0.	0.	21.	19.	27.	32.	34.	32.	27.	19.	9.	0.	0.	0.	0.	219.	68.	82.	55.	60.
EAST	0.	0.	0.	0.	66.	95.	89.	66.	34.	32.	27.	19.	9.	0.	0.	0.	0.	436.	85.	113.	62.	73.
SOUTHEAST	0.	0.	0.	0.	77.	129.	143.	138.	119.	90.	55.	20.	9.	0.	0.	0.	0.	781.	112.	162.	73.	93.
HORIZ.	0.	0.	0.	0.	24.	61.	91.	110.	117.	110.	91.	61.	24.	0.	0.	0.	0.	687.	105.	149.	70.	88.

MONTH 12	HO 1278.	TOT 40.	KT 38.	KT .460	KT .186
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ORIENTATION	HOURLY SOLAR RADIATION												DAILY TOTAL RADIATION	SAG/DAYTIME		SAG/ALL DAY						
	4	5	6	7	8	9	10	11	12	13	14	15		16	17	18	19	20	SATGS	SATGD	SATGS	SATGD
SOUTH	0.	0.	0.	0.	0.	37.	94.	129.	148.	155.	148.	129.	94.	37.	0.	0.	0.	971.	121.	187.	69.	95.
SOUTHWEST	0.	0.	0.	0.	0.	6.	21.	56.	90.	118.	137.	140.	122.	56.	0.	0.	0.	746.	102.	153.	62.	81.
WEST	0.	0.	0.	0.	0.	6.	16.	24.	29.	30.	61.	83.	87.	47.	0.	0.	0.	382.	72.	98.	50.	60.
NORTHWEST	0.	0.	0.	0.	0.	6.	16.	24.	29.	30.	29.	24.	16.	13.	0.	0.	0.	185.	56.	68.	44.	49.
NORTH	0.	0.	0.	0.	0.	6.	16.	24.	29.	30.	29.	24.	16.	6.	0.	0.	0.	178.	55.	67.	44.	48.
NORTHEAST	0.	0.	0.	0.	0.	13.	16.	24.	29.	30.	29.	24.	16.	6.	0.	0.	0.	185.	56.	68.	44.	49.
EAST	0.	0.	0.	0.	0.	47.	87.	83.	61.	30.	29.	24.	16.	6.	0.	0.	0.	382.	72.	98.	50.	60.
SOUTHEAST	0.	0.	0.	0.	0.	56.	122.	140.	137.	118.	90.	56.	21.	6.	0.	0.	0.	746.	102.	153.	62.	81.
SOUTH	0.	0.	0.	0.	0.	15.	50.	79.	98.	105.	98.	79.	50.	15.	0.	0.	0.	589.	89.	129.	57.	72.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	114.	113.	114.	109.	113.	119.	125.	134.	145.	141.	129.	121.	123.
SOUTHWEST	97.	101.	110.	115.	123.	132.	136.	139.	140.	128.	112.	102.	120.
WEST	72.	82.	98.	112.	126.	138.	139.	136.	127.	105.	85.	72.	108.
NORTHWEST	56.	64.	80.	98.	115.	128.	128.	121.	107.	86.	67.	56.	92.
NORTH	55.	60.	72.	86.	102.	113.	114.	108.	98.	82.	67.	55.	84.
NORTHEAST	56.	64.	80.	98.	115.	128.	128.	121.	107.	86.	68.	56.	92.
EAST	72.	82.	98.	112.	126.	138.	139.	136.	127.	105.	85.	72.	108.
SOUTHEAST	97.	101.	110.	115.	123.	132.	136.	139.	140.	128.	112.	102.	120.
HORIZ.	91.	108.	133.	153.	175.	192.	189.	181.	166.	134.	105.	89.	143.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, DAYTIME (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	175.	173.	168.	151.	148.	153.	160.	176.	202.	207.	194.	187.	174.
SOUTHWEST	145.	152.	160.	161.	166.	175.	179.	186.	193.	182.	162.	153.	168.
WEST	99.	116.	138.	156.	171.	186.	184.	180.	169.	141.	113.	98.	146.
NORTHWEST	69.	84.	107.	131.	152.	167.	165.	154.	134.	106.	82.	68.	118.
NORTH	68.	77.	92.	109.	128.	142.	140.	130.	118.	99.	80.	67.	104.
NORTHEAST	69.	84.	107.	131.	152.	167.	165.	154.	134.	106.	82.	68.	118.
EAST	99.	116.	138.	156.	171.	186.	184.	180.	169.	141.	113.	98.	146.
SOUTHEAST	145.	152.	160.	161.	166.	175.	179.	186.	193.	182.	162.	153.	168.
HORIZ.	134.	164.	201.	230.	257.	281.	272.	260.	238.	193.	149.	129.	209.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (SINGLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	67.	70.	78.	83.	92.	100.	104.	106.	106.	94.	80.	69.	88.
SOUTHWEST	60.	65.	76.	86.	98.	108.	111.	109.	104.	88.	73.	62.	87.
WEST	50.	56.	70.	84.	100.	111.	113.	108.	97.	78.	62.	50.	82.
NORTHWEST	43.	48.	61.	77.	93.	105.	106.	99.	87.	69.	55.	44.	74.
NORTH	43.	46.	58.	70.	85.	96.	98.	92.	83.	68.	54.	44.	70.
NORTHEAST	43.	48.	61.	77.	93.	105.	106.	99.	87.	69.	55.	44.	74.
EAST	50.	56.	70.	84.	100.	111.	113.	108.	97.	78.	62.	50.	82.
SOUTHEAST	60.	65.	76.	86.	98.	108.	111.	109.	104.	88.	73.	62.	87.
HORIZ.	58.	68.	88.	107.	129.	144.	142.	133.	117.	91.	70.	57.	100.

ANNUAL SUMMARY OF SOL-AIR TEMPERATURE FOR GLASS, ALL DAY (DOUBLE GLAZING)

ORIENTATION	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCT	NOV	DEC	ANNUAL AVERAGE
SOUTH	92.	98.	105.	106.	112.	120.	125.	130.	135.	124.	106.	95.	112.
SOUTHWEST	80.	88.	102.	112.	123.	134.	136.	136.	130.	113.	93.	81.	111.
WEST	61.	72.	91.	109.	126.	141.	140.	132.	118.	94.	73.	60.	101.
NORTHWEST	49.	57.	75.	95.	115.	129.	128.	117.	101.	78.	60.	48.	88.
NORTH	48.	54.	67.	83.	101.	114.	113.	105.	93.	75.	60.	48.	80.
NORTHEAST	49.	57.	75.	95.	115.	129.	128.	117.	101.	78.	60.	49.	88.
EAST	61.	72.	91.	109.	126.	141.	140.	132.	118.	94.	73.	60.	101.
SOUTHEAST	80.	88.	102.	112.	123.	134.	136.	136.	130.	113.	93.	81.	111.
HORIZ.	75.	93.	122.	150.	178.	199.	192.	176.	153.	118.	88.	72.	135.





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